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AND

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RELATING TO

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INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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LETTERS OF RUSTICUS ON NATURAL HISTORY.

EDITED BY

EDWARD NEWMAN, F.L.S., F.Z.S.,

LATE PRESIDENT OF THE ENTOMOLOGICAL SOCIETY.

This work more especially relates to those insects (generally known under the name of blight) which are so injurious to our most valuable crops, as TURNIPS, APPLES, HOPS, &c., &c.

PORTION OF CONTENTS.

Blights, or Insects injurious to Vegetables. Gooseberry Grub; the Fly described; Laying the Eggs; the young Grub; Voracity of the Grub; the Grub described; Change of Skin; Burrows in the Earth; Popular Remedies. Aphis or Plant-Louse; Injury it causes; Economy of. Hop-fly; Influence on Crop of Hops; Influence on the Duty; First Appearance of; Insect Enemies of; Remedies. American Blight. Apple Weevil; Description of; Economy of; Remedies. Apple-Moth. Apple-Grub; Economy of. Little Ermine Moth. Yellow-Tail. Turnip-Fly; Destructive Powers of; Economy of; Remedies. Turnip-Nigger; Description of the parent Fly; Economy of; Description of the Grub; Remedies. Turnip Weevil. Turnip-Aphis. Aphides in Apples, Poplar-leaves, and on Roots. Ants and Aphides.

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On Reason and Instinct. By the Rev. J. C. Atkinson, M.A.

(Continued from page 6054).

With regard to the presence and operation of Instinct in man the positions which, it appears to me, are most consistent with observation and sound reasoning, may be designated thus:—

I. That man in an uncivilized state* is the most influenced by the impulses of Instinct; so that in some of his actions, whether more or fewer, that essence or attribute may even predominate over Reason, as a practical rule of action; in an almost isolated action or two, may even operate to the exclusion of Reason.

II. That, presumably, as he emerges from the uncivilized state, Instinct, by degrees, ceases to have any predominant power, and, infancy past, in no case utterly excludes the operation of Reason.

III. That in a fully civilized state Instinct survives indeed, but is so restrained and regulated in its operation by Reason, that it becomes difficult to allege any but a very few of man's daily actions as influenced by it; or even to distinguish between the workings of Instinct and the rulings of Reason in actions, which, according to analogy, are originally due to or prompted by Instinct.

IV. That beyond all this, if by any chance man treads in a backward order the steps he has already imprinted in his passage from the uncivilized to the civilized state, he, at the same time, and as if

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* I purposely avoid using the words "in the state of nature," as indefinite and indefinable. I do not take the condition of any savage tribe or community to be the state of nature, because it is impossible to say what processes of change, moral, physical, psychical, of improvement or deterioration, such tribes may have passed through and may be still in course of passing through. Probably, the only human creatures in speaking of whom the expression "in the state of nature" could be correctly employed, would be our first parents in their earliest experience of life: and just as probably there are the materials for a fierce discussion in any attempt at realising what that condition was. One theory I have met with is, that they were idealess savages, and such as idealess savages anterior to experience must necessarily be: a theory I should be sorry to assent to, even for argument's sake. Another, that they were the noblest specimens of humanity ever seen in the world; noblest, physically and intellectually; and that the general tendency of the species since has rather been to deterioration than in the opposite direction. The truth, as ever, probably lies between these two extremes of opinion, and it would be an interesting theme for discussion in the hands of one of sufficient attainment, moderation, and power of vision at once comprehensive and discriminating.

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inevitably, becomes clothed upon again with some of his instinctive habits, and loses some of the finer functions of Reason: and that it is difficult to say how far this may hold good; difficult, I mean, from the exceeding difficulty, or rather, the impossibility of tracing historically the records of continuous declension, in the case of any degraded community, from what was, at least presumably, its once higher condition as to civilization, its once higher moral and intellectual standing.

I hardly know whether the limits of a paper in the 'Zoologist' will permit me to do much more than simply trace the outline of observation and argument by which these positions are supported. To convert the sketch into a finished drawing might occupy both too much time and too much space. Perhaps our simplest course may be to attempt at the outset to enumerate or classify the several lines of force or directions of impulse in which Instinct appears to operate in the inferior animals, and then to inquire what degree of analogy is traceable between such and such actions or lines of action common in the several cases of them and of mankind.

I should say that, allowing for a few anomalous instances which, in our present state and degree of information, seem to admit neither of explanation or of classification, all, or very near all, the instinctive actions of the various animals may be brought under one or the other of the following heads:—

I. Fear or self-preservation: by which, in various ways, almost equally numerous with the varieties of animals themselves, they are impelled to the effort to avoid danger.

II. Food-craving: by which they are enabled to discover supplies of suitable aliment; to discriminate between the suitable and the unsuitable; to adopt the necessary means of securing it by the appropriate use of their various faculties and endowments of sense and body; and so on.

III. Sexual love: by which they are impelled to coition, or cohabitation for one season or more; to nidification, whether more or less elaborate; to the concealment of their young; to the various modes of providing for their young; and the like, according to their several tribes or habits or peculiarities.

IV. Association: by which the various gregarious creatures, whether habitually or periodically, according to sex or according to season, under the ties of family or under those of species or pursuit of some common object—food for instance—live in communities.

V. Migration: under which vast numbers of creatures of very various tribes and families and species take journeys, possibly of enormous extent as contrasted with the powers of the travellers, from one district or country to another, at whatever season and with whatever object apparently kept in view by nature; such as a more abundant supply of food, a more genial temperature, or the continuation of the species.

VI. Local direction: or the law in virtue of which they retrace their course to given places from considerable distances; as for instance, the bee to its hive, alike in the forests of America and Africa and the cottage gardens of England, the salmon to its birth-stream, the swallow to the chimney or shed it was hatched in, the dog, the cat, the ass, the deer, the pigeon, and other animals without end, to their customary haunts after having been driven or forcibly conveyed to great distances therefrom, and under every disadvantage in connexion with finding their way back.

VII. Providence: under which certain species lay up in store, while the supply is yet abundant, various materials of sustenance for themselves or their young, against a season when the supply shall have failed or become inaccessible.

VIII. Hybernation: under which again certain species prepare a suitable abode for the coming winter, and, in due time, on its approach, betake themselves thither and become torpid or dormant for the season prescribed by nature.*

Now, in savage tribes, and in more or less uncivilized or very imperfectly civilized communities, I think one is frequently led to notice evidences of the instinctive impulses of Food-craving, of Fear, of Association, of Local direction, and, from time to time, of Migration.

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* I am aware that in the list given above it will be difficult to find a place for the admission of such workings of Instinct as are evidenced in the newly-hatched young duck or other aquatic bird, when it hastens into the water; in the down-covered chicken or partridge, when it takes its food by pecking from the ground; in the equally infantile corn crake pecking from the stalks of the herbage it lives among and not from the ground; and other instances of the same class. And it is almost equally difficult not to construct, but to name a class for their reception. I must, therefore, content myself with this notice of all such instincts in young animals. Further, I wish to remark that, as will appear by a reference to the instinctive processes or powers enumerated, I have not included mere appetites or desires. Indeed, as Dr. Carpenter shows (Human Phys. p. 784) a Desire, properly speaking, depends upon a purely intellectual operation for its formation, and especially before it can be fully entertained. And the same is true of Appetite if it be taken in its true sense, and not, in a lax sort of way, as a mere synonyme to Instinct.

It appears originally to be as much by Instinct that man is induced to the pursuit of game,—including under that term every creature, from the majestic elephant down to the merest insect, the capture of which is profitable to man, and especially for the purposes of food,—as it is that the lion and the tiger, the crocodile and the shark, the eagle and the hawk, that all animals of prey, without exception, are impelled to the attack and capture of their several quarries. The savage seems to pursue the wild creatures that are the main elements of his subsistence as naturally, or — what is here synonymous—as instinctively as they seek to elude or escape his pursuit. And, moreover, it is one of the last instinctive impulses or longings which seems to die out under the effects of long-continued civilization and its concomitants. English Mr. Briggs is just as keen, after thirty or forty years of yard-measures and counter-skipping, for his salmon-fishing, and deer-stalking, and grouse-shooting, as French M. Bourgeois, when expatiating at a distance from his accustomed *boulevards*, for his *gibier* of sparrows, tomtits, and "such small deer."

Moreover, the intuitive perception, the marvellous keenness and precision, the unfaltering sleight and skill available to the savage or nearly savage man for the capture of food-animals or the discovery of food-vegetables are worthy of attentive consideration. The Australian native, the Bushman, the native of Interior Africa will fare sumptuously for days or weeks where the European would perish helplessly of starvation ; roots, insects, grubs, — affording no appreciable token of their whereabouts except to the native eye,—serving to supply them with materials for even luxurious enjoyment rather than simply for bare sustenance. The pit-falls too, and hidden traps adopted by the savage for the capture of his game, are but parallels to the pit of the ant-lion and the web of the spider; while the unfaltering wariness and silent footfall which characterise his every movement, even when not engaged in the chase, are but a repetition of the stealthy pace and noiseless motion of the beast of prey when intent upon surprising its intended victim.

Again, what we understand by a coward is a much greater rarity among a savage or uncivilized race than in the dwellings of cultivated life : and yet the shifts and expedients and devices adopted by savages, alike individually and collectively, for the purpose of eluding or avoiding danger, on this side from human foes, on the other from wild beasts, are as various as they are remarkable. Some build their habitation—each habitation almost a village—on a foundation of tall posts; others fly from the neighbourhood of everything which might render a locality eligible as a residence, and in consequence liable to be visited by a party of possible enemies or marauders; others again hide singly, so closely that nothing but cunning equal to their own can detect their hiding-place, and even it is often baffled; and others yet adopt the most wonderful devices to mislead or evade pursuit. Their keen apprehension and almost intuitive perception of lurking danger too, is absolutely astonishing. A leaf or twig bruised or set awry, the displacement of a pebble or a few grains of sand, the almost indiscernible flattening or crushing of a blade of grass or dry lichen on a hard rock, a thin column of ascending smoke, the merest tatter of a torn article of raiment, are in an instant observed, scrutinized and made to give up copious information, where to the unremarking, unacuminated eye of the civilized man there would be no more suggestive material than in the filthy wares of the rag-merchant or the torn fragment of a copy-book from some village boy's kite's-tail.

Now, in all this it is impossible not to be struck with the analogy—much less modified than might have been expected, by the vastly higher intellectual organization possessed by the savage man as compared with even the highest brute—between the avoidance of danger by the uncivilized man and by the other animals of creation. An analogy, indeed, so striking, that we are not so much justified in calling it instinctive as compelled so to call it. For the purpose of showing this analogy more conspicuously, I will not repeat again instances of brute caution and stratagem already often repeated, but will select one or two observations recorded by Dr. Livingstone, which forcibly arrested my attention in the perusal of his absorbing narrative. "It is curious," he says, "to observe the intelligence of the game: in districts where they are much annoyed by firearms, they keep out on the most open spots of country they can find in order to have a widely extended range of vision, and a man armed is carefully shunned. From the frequency with which I have been allowed to approach nearer without than with a gun, I believe they know the difference between safety and danger in the two cases. But here, where they are killed by the arrows of the Balonda, they select for safety the densest forest, where the arrow cannot be easily shot: * * * * and on several occasions I have observed there was no sunshine to cause them to seek for shade."—('Livingstone's Missionary Travels,' p. 280). Again, "Ants surely are wiser than some men, for they learn by experience. They have established themselves on the plain where water stands so long annually as to allow the lotus and other aqueous plants to come to maturity. When all the ant-horizon is submerged a foot deep they manage to exist by ascending to little houses built of black tenacious loam on stalks of grass and placed higher than the line of inundation. This must have been the result of experience, for, if they had waited till the water actually invaded their terrestrial habitations, they would not have been able to procure materials for their aërial quarters unless they dived down to the bottom for every mouthful of clay."—(Id. p. 328). Once more, "When the wounded buffalo heard the approach of his pursuers he always fled, shifting his stand and doubling on his course in the most cunning manner. In other cases I have known them turn back to a point a few yards from their own trail and then lie down in a hollow for the hunter to come up."—(Id. p. 266). Space will not allow me to do more than allude to the habits and stratagems of the fox, the deer, the hare—not to mention other animals—when subjected to pursuit,* many of which are familiar as household words from their surprising nature and continued publication; to the devices of the hare when about to resume her form; of the rabbit for concealing her young, (actions, all of them emanating originally and principally, if not exclusively, from Instinct), in the attempt to illustrate the marvellous analogy observable between the habits and actions of the savage man, under the apprehension of danger, and those of the wild animal when under the powerful impulses of instinctive Fear or self-preservation.

As to Local direction, a remarkable instance of continual occurrence is cited above. The white man, in the American forest without his compass, loses his way before he has gone out of ear-shot of his tent, and possibly spends hours in delineating with his weary feet ring over ring within the space of a mile or half a mile square.† The red man guides his steps as unerringly as though his eye were fixed on his bourne, or an automaton compass, self-explaining, moved on before him; I give a similar illustration from Dr. Livingstone: "The grass at this place was so tall that the oxen became uneasy, and one night the sight of a hyæna made them rush away into the forest to the east of us. * * * Our Bakwain lad had gone after them, but had lost them in the rush through the flat, trackless forest. He remained on their trail all the next day and all the next night. On Sunday morning, as I was setting off in search of him, I found him near the waggon. He had found the oxen late in the afternoon of Saturday, and had been obliged to stand by them all night. It was wonderful how he managed without a compass and in such a country to find his way home at all, bringing about forty oxen with him." — (Id. p. 168). Now, this instinctive capacity of self-guidance is a characteristic of no insignificant portion of the existing human inhabitants of the globe. Many and numerous tribes in America, Africa and Australia, are known to possess it in a greater or less degree, and thus present a very remarkable instance of the existence and energetic operation in the human species of pure, unquestionable Instinct.

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* See Mr. Couch's notice on the connexion of Reason and Instinct (Zool. 5667) for a very remarkable case in point as regards the hare.

† "Long practice is requisite to enable the white man to walk straight, even for half a mile through the bush. At first, he invariably deviates, thinking he is taking a straight course, and describes a circle, ending at the very spot whence he started. When there has been no sun, I have gone completely round in a square half mile."—(Hardy, i. p. 33). The native of a moorland district, when trying to traverse the moor in a fog, if he lose the familiar track, is in the same predicament. An aged parishioner of mine once told me his experience in a case of this sort. There was no great extent of moor where he went astray, but for six hours he was tramping wearily on in a never-ending, irregular sort of spiral. The crowing of a cock at last revealed to him the neighbourhood of a dwelling,—if I remember right, the very one he had

Again, as to Association. The lodges of the American Indians, the kraals of the Hottentots and Caffres, the villages or towns of Dr. Livingstone's route from the East Coast of Africa to the West, the tribes of Australia possessing no fixed or permanent habitation, but always living together—all tell the same tale—all deliver the same doctrine. You never hear of individuals of savage or uncivilized people living singly, in isolated seclusion from their fellows. Even the outcasts from other tribes, fallen and degraded as they are as to all that elevates humanity, as to all indeed that worthily characterises humanity, though they scarcely know the use of fire, or recognise the ties and sanctions of domestic life, yet herd together in their dens and caves, live a life in common wherever and whatever the site of their squalid common home may be.

And lastly, to pass to the subject of Migration. This has been a

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left shortly before he lost himself,—and so put him again into the track he knew. I have known the sportsman with his attendant, who almost knew every hollow and track on the moor, obliged to sit down and wait the lifting of the fog which had come on them unawares. And I have myself, on a narrow strip of moor which I had traversed scores of times in all directions, and with a companion who knew it as well as I did, missed my direction in crossing it, at the first attempt getting 45° too much to the south, and the second as much to the north of my true course.

law of man's nature from the earliest period of his history; a law subject to modification under the various circumstances and exigencies of the race variously modified at various epochs and localities; but yet in its great root and principle essentially the same as impels the swallow, the crane, the woodcock, the lemming, the rat, the salmon, to their annual, or periodical, or occasional journeys of removal from old, but no longer fitting scenes and episodes of life, to others newer and replete with the requisites which had sustained, or were about to sustain, failure in the old. As the family of man in the elder ages of human life received ever-continued accessions, and the non-existence of sources of proportionate decrease made each accession an almost positive gain in population, tribes that were offshoots of the parent tribe must have been thrown off in all directions; and from these again, as new centres of the globe-peopling process, others newer went forth into the heretofore untrod, untried wastes of Creation. True, at the Flood, such comparatively limited portions of the earth's surface as had owned the hand of its human lord were again depopulated; but only for the repeopling process to go on with a rapidity before unrealised even in idea. And before long, numerous families, each family already a tribe in miniature, pushed their way and their fortunes into every portion of the world, exploring in every quarter scenes and countries hitherto unvisited and unseen by mortal foot or eye. Then the Tower of Babel heard the already recognised law of migration authoritatively promulgated—beheld it branded into the living tablets of human nature. And the law has never yet become effete. No portion of it has been annulled. Its operation—certainly never for long even suspended—has never ceased to afford evident tokens of its continuance. Look at the "Great Migration," as it is called, which Europe saw before the mediæval times, the colonizations of still and much earlier periods, the irruptions of huge hordes of fierce herdsmen-warriors in many an age and many a country in Asia and Africa, upon lands and labours they knew not of, except it were by a dim, dreamy hearsay, myth-like both in its vague dimness and its fundamental element and substratum of truth. These illustrations of the Instinct which impels—I use the word advisedly, which impels—the human species to migration from the scene of failing capabilities and resources to newer ones of abundant supplies and exceeding susceptibility of development, are as numerous as the ages which have looked upon man's existence, as striking as the succession of scenes that have been ever newly presented to his wondering gaze as he has been again and yet again driven to seek some newer and fitter abiding place. The illustrations of our first position, up to this point adduced, cannot be without weight to one who thoughtfully and dispassionately considers them. There are, however, others of a somewhat similar, or at least analogous description, which seem to me both interesting and instructive: I mean such as may be derived from observation of the habits or powers of the young savage.

Both the eye and the ear among savage or uncivilized tribes are apt to be, so to speak, if not in intention, yet in effect, much more carefully trained and strengthened than the other organs of sense; and to such a pitch of delicacy and keenness do the senses of sight and hearing attain, that a white man is often astonished at the power evinced by both. It is not that there is any anatomical difference in the eye or ear of the Savage and the citizen of London or Paris, or that the natural organ of him who never heard of a telescope is more highly organised than that of the man who rejoices in his Dollond, but simply the result of practice or use; but it is the practice or use, not of individuals, but of generations and for ages; for it must be observed that the young savage is to a great degree born with this keen vision and sense of hearing. And not only so, without any special course of teaching and training, any cumbersome ceremonial of "precept and example too," he begins—long before either years or stature place him in advance of the period or pursuits of childhood—to exercise the powers by which his father is so mysteriously enabled to track the, to other eyes save his own, invisible footsteps of the man or the wild beast, to tell how long since it passed, its stature, its peculiarities of gesture and gait, may be its very sex and age. Nor is he at a loss in the forest: like his father, his compass is nature-given, and he threads his unfaltering way through forest thickets and tree-canopied shades, that one would think might baffle any save one well skilled in following the directions of the unerring needle.

Yet again, the young of any quadruped the first time it finds itself plunged into water, if it be of age to have the strength for the requisite exertion, instinctively makes the necessary motions for supporting itself on the surface, and directing its course to the margin; swims, as we express it. So too, where the uncivilized people dwell near the coast or on the river bank, the young savage is customarily found, when scarcely yet more than a mere infant, able to swim, and even delighting to sport in the water. The following testimony is noteworthy:—" One day I had repaired to the stream for the purpose of bathing, when I observed a woman sitting upon a rock in the midst of the current, and watching with the liveliest interest the gambols of something, which at first I took to be an uncommonly large species of frog, which was sporting in the water near her. Attracted by the novelty of the sight, I waded towards the spot where she sat, and could hardly credit the evidence of my senses, when I beheld a little infant, the period of whose birth could not have extended many days back, paddling about as if it had just risen to the surface, after being hatched into existence at the bottom. Occasionally the delighted parent reached out her hands towards it, when the little thing, uttering a faint cry, and striking out its tiny limbs, would sidle for the rock, and the next moment be clasped to its mother's bosom. This was repeated again and again, the baby remaining in the stream about a minute at a time. * * * * For several weeks afterwards I observed this woman bringing her child down to the stream regularly every day, in the cool of the morning and evening, and treating it to a bath. No wonder that the South Sea Islanders are so amphibious a race, when they are thus launched into the water as soon as they see the light. I am convinced that it is as natural for a human being to swim as it is for a duck. And yet in civilized communities how many able-bodied individuals die, like so many drowning kittens, from the occurrence of the most trivial accidents."—(Melville's 'Marquesas Islands,' p. 252.) No doubt there is involved in this case the influence of teaching; and, no doubt, that teaching is, in a sense, more intelligent than the presumed teaching of the bird or the beast to its young. But, admitting this, and recalling the exceedingly tender age of the children alluded to, and the failure that would be found attaching to an attempt to teach them something of a nature diverse from that bodily act which has been a habit of their progenitors for ages, it is impossible to assert that there is not here at least an approach to what is very like the hereditary instinct of the brute animal. This, at least, must be conceded, that the observed powers and peculiarities of the young savage, briefly adverted to above, must be accounted for either on the ground of pure or simple Instinct, or else on that of Hereditary Instinct. To me, I must confess, it appears that both are involved.

All that has been so far advanced applies to quite savage or uncivilized tribes, and much of it almost as strongly to more or less slightly civilized communities. And there are abundant materials for carrying out a series of similar observations to a considerable length. This, however, I forbear to do, alike from necessity and from a conviction that it would be a work of supererogation. I must not, however, altogether omit to notice the apprehension which all the families, and tribes and nations of the human race, in all ages and in all countries, have been found to entertain in some form or other, though possibly more or less disguised and obscured, of the existence of a Supernatural Being and of a future state of existence. This most remarkable fact is, with scarcely a dissentient voice, attributed to an inward utterance or impulse of Nature; that is, in other words, but with scarcely a shade of variation in meaning, the apprehension so universal, and so remarkable in its essential identity as well as its universality is an instinctive apprehension. And in so far as it is justly so called, it would tend to justify the expression, "An Instinct peculiar to man."

Such then are some of the observations and reasonings on which our first position depends for its substantiation; but, before taking leave of it, I may be permitted to append a few sentences from Sir B. Brodie's 'Psychol. Researches:'—"We cannot but suppose," we find him saying at p. 199, "that when man first began to exist, and for some generations afterwards, the range of his Instincts must have been much more extensive than it is at the present time. We see the infant first deriving nourishment from his mother's breast, but when the period of lactation is over, the experience of his parents supplies him with the fit kind of food derived from other sources. The absence of such experience must, in the first instance, have been supplied by a faculty which he does not now possess (but which we see manifested in the lower animals), directing him to seek that which is nutritious, and to avoid that which is not so, or which is actually poisonous. It is easy to conceive that much besides in the habits and actions of human beings, which seem now to be the results of experience and imitation, was originally to be traced to Instinct. And, indeed, there are many things which cannot well be explained otherwise. * * * * The majority of instincts belonging to man resemble those of the inferior animals, inasmuch as they relate to the preservation of the individual and the continuation of the species. To these the social Instinct is superadded, not indeed peculiar to man, but in him attaining a greater degree of development than in other creatures."

J. C. Atkinson.

Danby Parsonage, Grosmont, York,
March, 1858.

Reason and Instinct.—An excellent definition of the distinction between Reason and Instinct is, as at appears to me, one which I learned long since (when and whence it is impossible to recollect at this distant period), namely, that Reason varies its operations illimitably according to circumstances, whereas Instinct does not. This definition may perhaps be pronounced not strictly philosophical, but its clearness and simplicity (as well as accuracy) adapt it better for common persons and purposes than more abstruse propositions. I have added, I believe, the word *illimitably* to my original authority, because I am aware that instances may occasionally be noticed of extraordinary contrivance in animals, not merely among the higher orders, in meeting some change of their usual condition. But such departures from customary routine must be considered rather the acts of individuals, than as indicating any advance of their species generally; for I believe it to be an undoubted fact, and one which every close observer of animal habits must have remarked, that among irrational, no less than among rational creatures, different degrees of natural intelligence exist. Besides, even when superior animal talent (so to speak) does diverge somewhat from the ordinary track of its congeners, its powers of invention are speedily exhausted, and not equal to continued demands upon it, as would be the case with Reason. The tendency of these suggestions may be illustrated by some familar examples. The chaffinch, when constructing its nest, covers the outside with lichens so precisely similar in colour to the branch in which it is placed, that persons will pass repeatedly without perceiving it. But the bird, however often its nest may have been taken, will perseveringly build in a low tree or a bush, within reach of even children, instead of learning the greater security of a high tree. The house sparrow, again, in some respects very far from a stupid bird, yet appears particularly so in its nidification. The loose straws usually projecting from the nest render it one of the easiest to be discovered, and after it has been pulled completely down, the birds will immediately form another in the same place; which is so constantly their habit, that the alternation of framing and demolishing might be carried on through, perhaps, the whole breeding-season. When the sparrow builds, as it very commonly does, in a tree, its slovenly nest is not unfrequently blown down by a strong wind, in which case a new edition is forthwith produced, in the very same position, of exactly similar materials, and as utterly devoid, as the first, of any precaution against a misfortune like that which has recently occurred, nor will repeated accidents teach the expediency of such precautions.—*Arthur Hussey; Rottingdean, May,* 1858.

A Plea for Birds.—In the 'Times' of this morning there is an account of the appearance and destruction of a very rare bird, the hoopoe, which was shot by Mr. P. Matthews, of Ongar, on Wednesday last. Permit me a brief space to protest against this foolish and cruel act. The hoopoe (*Upupa epops*) is an unusual visitor to the British Isles, but has been met with in almost every county in England and in many parts of Wales. It is a most amusing bird in its habits, of peculiar and beautiful plumage, and, being entirely insectivorous, is perfectly harmless both in our gardens and orchards. They are numerous in many parts of Europe, particularly in the marshes near Bordeaux. They have been known to breed in this country, and would doubtless increase, but the moment they appear they are wantonly destroyed, as in the instance above recorded. Owing to this spirit of persecution many species of birds which were once numerous in Great Britain have entirely disappeared, and year by year many of the Sylviadæ are becoming exceedingly scarce. Last spring a black redstart (*Phœnicura tithys*), being the first recorded in Hertfordshire, took up its abode in a friend's garden in this town, but it was destroyed notwithstanding our efforts to preserve it. It has been stated, and I fear with some truth, that the greatest enemies to birds are ornithologists, who should be their warmest friends. No sooner is a strange bird discovered than war to the death is waged against it, and happy the pseudo-naturalist who succeeds in depriving the wretched little wanderer of its life. His fame is duly chronicled in the county newspaper, and a skilful taxidermist employed to set up "the specimen," and exhibit it to his admiring friends. I am aware that all this is justified as being in the cause of science, but I would ask how is science advanced by the death of Mr. P. Matthews's hoopoe? If a specimen were wanted it could have been procured from France at the price of a few shillings. Last year, in a journal devoted to Natural History, there appeared a notice of a nightingale in Devonshire. Now, all naturalists are aware that, from some cause which we cannot explain, these sweet songsters seldom visit that or the adjacent county of Cornwall. One would have thought that its very unusual appearance there would have been hailed with delight, and so it was, probably, by most of the residents; but in an unlucky hour it was discovered by a naturalist, and—with indignation I write it—he barbarously and selfishly took its life. "I was fortunate," writes this cruel philomelicide, "to shoot it as it was singing on the topmost sprig of a hawthorn bush." I protest, as I write, I can hardly restrain my pen within the due bounds of courtesy, and I shall not trust myself to comment upon it. But I indignantly deny to those destroyers the honourable name of naturalists. To my mind, the great end and aim of the study of Natural History is to induce us to note the wonderful instinct by which each animal and bird procures its food, conceals and rears its young, and the adaptation to the situation and circumstances in which it has been placed by the Great Creator, and so to teach us

> "To look from nature up to nature's God."

Nor do I consider that in any case we are justified in depriving these innocent creatures of their life, even though it were necessary in the cause of science.—*James S. Walker; New England House, Hitchin, Herts, April* 19, 1858.

Occurrence of the Hoopoe and Pied Flycatcher in Yorkshire.—I send you a notice of two scarce birds which during the last week have been killed in this neighbourhood: a male specimen of the hoopoe was shot at Witton Fell, near Middleham, on the 24th of April, an unusual time of year for this species to be procured in Great Britain; and on the 29th of the same month a pied flycatcher, also a male, was shot near Reeth, the first time the bird has come under my notice in this district.—*Henry Smurthwaite; Richmond, Yorkshire, May* 1, 1858.

Plectrophanes nivalis.—In the April number of the 'Zoologist' (Zool. 6015) Mr. Matthews states that a snow bunting was in the habit of perching upon a tall tree in a hedge-row. Surely this is a mistake. At page 281 of the 'British Ornithology,' Mr. Selby, in speaking of the snow bunting, says "they run with ease and celerity, like the lark genus, and *never perch on trees.*" I can confirm Mr. Selby's statement from my own observations: I have seen numbers of these birds on the coast of Essex, but in no instance have I ever seen one attempt to perch on a bush or tree, but they will occasionally upon low, broad railings. I may also say that the pure black and white plumage is their summer livery, in which state they are very rarely seen in Britain. In winter the black feathers of the back are broadly edged with ferruginous, and the head, neck and all the under parts are strongly tinged with the same colour, becoming of a deep chestnut on the crown of the head and back of the neck; in the breeding plumage these parts are pure white. — *Henry Doubleday; Epping, April* 16, 1858.

[There is certainly a mistake in Mr. Matthews's statement, which it is important to correct. Was the pied flycatcher the bird that he saw.—*E. N.*]

The Ring Ouzel near Banff. — The ring ouzel (*Turdus torquatus*) appears to be getting much more numerous in this neighbourhood than it used to be. I have, this year, met with many pairs in places where I had never seen it before, and I have in one instance been fortunate enough to find a nest containing four eggs.—*Thomas Edward; Banff, May* 11, 1858.

Retention of Scent by the Partridge and other Game. — Reference having been made in the 'Zoologist' (Zool. 6014) to an opinion entertained by some persons, that game birds (should not the hypothesis be extended to all game animals, whose only defence is flight?) possess the power of retaining their scent, I will subjoin two anecdotes bearing upon the perplexing phenomenon of scent. Holding, myself, no theory upon the subject, I draw no conclusion, one way or the other, from what I have to relate, which I mention merely as facts, for the authenticity of which I will vouch. Though my own adventure occurred very long ago, it was in my native parish, and in a part thereof with which I was intimately familiar, beside that peculiar circumstances impressed the incident upon my memory, so that even now I could point out the locality, though I have not visited the spot for much nearer thirty than twenty years. With regard to the second story, which I know merely from the report of another, I may state that my informant was an intelligent, well-conducted person, whose veracity I have not the smallest ground for doubting. More than forty years ago I shot a cock pheasant, which fell winged in an open field, and ran straight for the opposite hedge, reaching and passing through it before overtaken by the dogs, which followed instantly, hunted him a little distance down the hedge, and then lost the scent, which they were unable to recover, when I joined them immediately after. Being convinced that the dogs (both very good, and even the youngest of some experience) would not have failed to regain the trail of the bird, fresh as it was, had he slipped away in any direction, after vainly trying all round for some time I returned to the place where the pheasant had come through the hedge, for the purpose of carefully examining it in the course the dogs had shown him to have taken, although the hedge, from having been closely browsed by sheep on both sides, was extremely thin, without grass or weeds at the bottom to cover even a lark. Before going far I espied the tip of my friend's long tail in a small hole, like a rat's, under an old stump of the underwood composing the hedge, and where, had I trusted solely to the noses of the dogs, the game might have remained in perfect concealment. In this occurrence it is to be remarked that the mere feet of the bird left sufficient taint upon the bare ground for dogs to pursue unerringly for a distance of (say) about fifteen yards, more or less; while no effluvium from the entire body of the pheasant passed out from its hiding-place to indicate its whereabout, though its enemies were eagerly seeking after it, with an interval of only a few inches between them. Moreover, and this deserves to be especially noted, no scent appears to have been left round the entrance of the hole, which was so small that so large a bird must of necessity have pressed against the whole circumference of the orifice in forcing its body through. Very many years subsequent to the event related above, the gamekeeper of a friend in the Weald of Kent told me, that, when attending his master at some time previously, he had marked down a cock pheasant from the hill where he was standing, in a wood upon an opposite hill, but, upon reaching the spot, no pheasant, nor trace of a pheasant could be discovered, though the underwood being of only, I think, one year's growth, there was nothing to puzzle for a moment a team of, probably, from three to five well-trained Sussex spaniels. After searching fruitlessly for some distance around, in utter perplexity the man said, either aloud or to himself, "I am quite certain I saw the bird settle precisely at this bush," into which, as he spoke, he thrust a switch he carried, when the pheasant instantly rose from the very centre, where he had been lying quietly while his pursuers, men and dogs, were hunting for him, separated only by a few inches of twigs. In this case, if the dogs had been pointers or setters, very probably they would have detected the presence of the game, whereas spaniels, working with their noses close to the earth, were not aware of the vicinity of the bird, because he had dropped at once into the bush without leaving any trail upon the ground. When, however, we consider, that several trained dogs with very fine noses (which the old Sussex spaniels unquestionably possess) were seeking their own peculiar game, and aware they were expected to find some there (which good, experienced dogs will understand from the orders given them), it seems strange that they should not discover, nor even suspect how very near they were to their object, if the odour of the game had been as widely diffused through the atmosphere, as it certainly would be under ordinary circumstances: the pheasant, while resting upon the underwood-stock, might have been raised above the soil perhaps from nine to, in the extreme, eighteen inches. —*Arthur Hussey; Rottingdean, May*, 1858.

Small Variety of the Partridge.—Two of the correspondents of the 'Zoologist' have inserted short notices of the supposed variety of partridge, and in connexion with my paper on that bird, which I trust, they will think, justifies me in addressing this note to them. It would appear that their observations have been made on birds found in the same district and not in distant parts of it; as the one writes from Godalming, the other from Fowey, near Liphook. Will they permit me to draw their attention to the remarkable discrepancy in their several notices of the plumage of these birds? Major Spicer writes, "There is no difference of plumage that I can detect." (Zool. 6014). Mr. Waring Kidd, on the other hand, speaks of them as known to him and others by the name of "little black heath-birds," as being "invariably of a blacker colour" than the ordinary partridge; and accounts for their "dark colour" as originating in their food or part of it. (Zool. 6059). I do not know how far apart Fowey and Hindhead are,—I think not many miles,—and it certainly is an interesting fact, if these partridges differ so greatly and so commonly as the communications of the two gentlemen named lead us to infer. I confess when I saw in the 'Field' a sort of challenge thrown out for the production of those smaller birds,—the editor to be the judge,—and excuses instead of partridges were forwarded to that gentleman, I began to have great doubts as to their existence anywhere, except in imagination. I think the concurrent testimony of Major Spicer and Mr. Kidd, both of whom agree in stating the inferiority, in point of size, in comparison with the common bird to be about one-third, important; and that it is at least worth while to call their attention to the discordancy of their statements as to the plumage of the partridges in question. —*J. C. Atkinson; Dandy Parsonage, Grosmont, York, March*, 1858.

Occurrence of the Broad-billed Sandpiper (Tringa platyrhynca) *for the third time in Norfolk.*—I have just purchased a specimen of this rare sandpiper, which was killed on the 23rd of April, near Yarmouth, I believe on Braydon Broad. This bird is a male, gradually assuming its summer plumage: the rufous edgings to the feathers appearing over the head, back and scapulars. The first British specimen recorded was also, according to Mr. Yarrell, obtained on the muddy flats of Braydon, on the 25th of May, 1836: the sex in this case was not ascertained. From that time no others had been noticed until a male, in very similar plumage to the one recently procured, was shot at the same place, and, singularly enough, on the same day of the same month, May 25th, 1856. In each case they appear to have been picked out from amongst dunlins and ring plovers.—*H. Stevenson; Norwich, May* 1, 1858.

Occurrence of the Glossy Ibis in South Wales.—I have received, for the purpose of preservation, a very fine specimen of the glossy ibis, killed on the 19th of this month, at Langharne Marsh, near St. Clears, Carmarthenshire, South Wales. Also, a male specimen of the gray shrike, killed at Loughton, Essex, on the 12th of this month.—*Thomas Hall; London Wall, April* 29, 1858.

Occurrence of the Dusky Petrel (Puffinus obscurus) *in Norfolk.*—A county that can claim the first British specimen of Steller's western duck, and more recently the only specimen of the capped petrel ever obtained in this kingdom, besides many other rarities, may be fairly considered without further additions a "rich ornithological district." I have the pleasure, however, of recording a not less interesting capture than either of those above-mentioned, in the fact of a dusky petrel, the true Puffinus obscurus, of Gould, having been picked up dead in this county. About the 10th of this month a strange bird was found dead by the gamekeeper, on the estate of Captain Meade, at Earsham, near Bungay. It was at once sent to a bird-preserver in this city to be stuffed, in whose possession I first saw it, but, unfortunately, not until it had been skinned and set up. Its smaller size at once distinguished this bird from the manx shearwater (*Puffinus anglorum*), and its exact resemblance to the figure of the dusky petrel in Mr. Yarrell's last 'Supplement,' added to the length and other measurements, perfectly agreeing with the description there given of this rare species, no doubt could well exist as to its identity. I might also state that the bird-stuffer having copied exactly the attitude of the bird as delineated in Yarrell, the resemblance, even at first sight, was more strongly marked. This specimen proved to be a male, but in very poor condition. It had evidently not been shot, but a wound on one side of the head, as though it had been hit, or had flown violently against something, was probably the cause of its being found dead. Except on the side of the head, as stated, the feathers were perfectly clean and unruffled, but the inner web of one foot was partially nibbled away, as though a mouse or some other vermin had been at it, luckily without doing further injury. It is particularly interesting, through this second appearance on our coasts, to establish the claim of this petrel to a place in our British list, especially since the first specimen had no stronger right to be so called, than the fact of its having flown on board a sloop near the Island of Valentia, off the south-west coast of Ireland. The following description of the plumage, in this instance, will be found to differ but little from that given by Mr. Yarrell, except that this bird is perhaps more in a state of change. Top and sides of the head, neck above, upper tail-coverts, upper surface of the tail-feathers and of the wings dull sooty-black: the feathers of the back, including the scapulars, dark shining greenish black, each feather bordered by a very minute darker edging: the chin, throat, sides of the head below the eyes and including a narrowed rim over each eye pure white; as also the breast, belly and the under wing and tail-feathers: on the sides of the neck and passing downwards in front of the pinions, light grayish bars shading off into the white of the breast. Not having seen the bird in the flesh, I cannot speak as to the true colour of the beak and feet; the former is now dull black and the latter as to the webs yellowish brown.—*H. Stevenson; Norwich, April* 29, 1858.

Occurrence of the Kentish Plover near Penzance.—A female specimen of this little plover was killed on our flat sands to-day, and I have had an opportunity of examining it minutely in the flesh. I have a male specimen, killed here, but I never saw a female before, and I was somewhat perplexed in determining whether it was a female little plover at first. The following are a few particulars I have noted: weight 1½ oz.: length from the beak to the end of the tail 6¾ in.: beak black: legs lead-blue: feet black: forehead pure white, extending partly over the eye, the purity then giving way to a reddish white passing over and behind the eye; the whole of the under parts unsullied white, the sides of the upper breast excepted, which have a patch of hair-brown, which in the male are black: the whole upper plumage from the top of the head to the centre of the tail pale ash-colour, the remainder of the tail nearly black: the shaft of the first quill-feather nearly white, the rest of the quill-feathers having the distal portion white, the remainder darker.—*Edward Hearle Rodd; Penzance, April* 17, 1858.

Occurrence of Wild Geese in the Isle of Wight.—A fortnight ago last Thursday, Mr. Murrow shot four Canada geese and two bernicle geese: a flock of eight came in Freshwater Bay; he went off in a boat, and in six successive shots killed six out of the eight. I have stuffed three of them: one of the bernicles will be sent to the British Museum by Captain Cockburn: I tried to buy the others, but he would not part with them.—*F. Rogers; Royal Hotel, Freshwater Gate, Isle of Wight.*

Supposed New Ammocœtes.—I beg to send you for insertion in the 'Zoologist' the following description of what I take to be a new species of a Petromyzidæ, perhaps an Ammocœtes. Should it prove so, that is if no one points out that I am wrong, I will name it and give its locality in a future number of the 'Zoologist.' In length it is about 6½ inches; in girth, where thickest, ¾ths of an inch. In general form it is rather compressed than round, being only slightly so for about two inches of its length, where it then appears flattish, gradually narrowing towards the tail; but on the top of the head, and immediately above the eye, which is remarkably small, and almost hid in the centre of a small groove, there is an opening or orifice surrounded with a sort of lip of a beautiful yellow colour, beyond which and extending backward there is a small depression. Dorsals two, about half an inch apart; the first commences near the middle of the back, and is only a little over an inch in length; the other reaches to the caudal, to which it is united, and extends without intermission to about an inch on the under side, forming a sort of anal fin: the vent, which is about two inches from the end of the tail, has, like the orifice on the head, a kind of lip or fringe round it. Branchial openings, eight on each side, are placed in a curved groove or canal. (In this respect it differs from all our Petromyzidæ, as yet described, so far as I am aware). The mouth may be said to be squarish, with the under lip depressed. There is no appearance of teeth, but numerous and very delicate cirrhi seem to supply their place. When fresh, it was on the top part of a most beautiful oil-green shading, and a dull yellow on the sides and belly: a bright yellow line runs along the middle of the back, beginning about an inch from the head, and extends round the caudal to the belly, dyeing the dorsals of the same colour. From the foregoing it will be at once apparent, that though it agrees in some respects with Ammocætes branchialis of British authors, still it differs very much in others. The eight branchial apertures and the squarish mouth are two most important distinctions, and cannot, I should think, allow it to be ranked only as a variety of the species just named. But as I have no wish whatever to augment species but on truthful grounds, I leave it to the readers of the 'Zoologist' to decide, if any of them will be kind enough to give their opinion.—*Thomas Edward ; Banff*, *April* 14, 1858.

[This description has many points of extreme interest, and I sincerely hope that my ichthyological readers will endeavour to throw some light on the subject. The family Petromyzontidæ is made to comprise four genera, Petromyzon, Ammocætes, Myxine and Amphioxus: the connexion of the last of these with the other three is not very manifest. Petromyzon and Ammocætes have seven lateral orifices or gill-openings; in Myxine I believe that two only have been observed. The wonderful history of Myxine appears to me to require further elucidation. It seems incredible, and yet remains uncontradicted, that this worm-like fish should live within the bodies of living cod and haddock, having no other food than the proper substance, the muscle of these fishes, just as the larva of the ichneumon-fly feeds on the viscera or muscle of the living larvæ of moths and butterflies. I shall feel sincerely obliged to any naturalist who can, from personal observation, confirm, elucidate, or even refute this apocryphal-looking theory; as also to any reader who can identify Mr. Edward's description as applicable to any known species of the family Petromyzontidæ.—*Edward Newman*].

Descriptions of Two Unrecorded British Isopoda. — During a short trip to Plymouth and Polperro I met with the two following Oniscoids, which have hitherto escaped notice:—

PHILOSCIA COUCHII, *Kinahan.*

Body smooth. Head rounded, transverse, nearly straight across the front. The third ring produced into a small lobe beneath orbits. Telson (last ring of body) narrow, triangular. Apex obtusely rounded, fringed with four to six stiff spines; lateral margin distinctly excavated. Appendages of telson having the accessory appendage scarcely one-fourth the length of the ischium, which latter is elongate-subulate. Colour fulvous-gray, with patches of white. Runs with great activity, does not roll.

Habitat. — Among stones and decaying sea-weed near high tide-mark, at Tallant Cove, Cornwall, where it was in company with Orchestea littorea, Porcellio scaber, Ligia oceanica, Lithobius forcipatus, &c. I have given it a name after the great illustrator of the Cornwall Fauna, Jonathan Couch, F.L.S., of Polperro.

PHILONGRIA ———, n. s.?
ITEA MENGII (*Zaddack*)??

Body scabrous and tuberculated. Eyes very small and black, situated very laterally. Third ring produced into a small lobe on each side of the head, so as to give the effect of a lateral lobe. Internal antennæ long, three-jointed, very conspicuous. First to third abdominal rings granulated; fourth to telson smooth. Telson, apex truncate, not emarginate. Abdominal false feet same as in Philongria celer. Colour rose-red, with white median stripe, or white. Runs with great agility, does not roll.

Habitat.—Gardens and cellars, Plymouth, where I had the pleasure of first recognising this species in the collection of C. Spence Bate, F.L.S., who kindly pointed out the locality in which he had procured it, and where we found it abundantly. It so closely approaches Itea Mengii, as described by Zaddack, that I have refrained from giving it a name, as I can scarcely persuade myself that there must not be some mistake in his description of the "antennæ internæ" and rings of the abdomen: should this surmise prove correct the genus Philongria, as established by me last year, must give place to Itea of Koch, as limited by Zaddack, and Philongria celer will prove identical with either Itea riparia or Itea lævis, or perhaps with both. The granulations of the cephalo-thorax at once separate this species from that described by me last year as above.

Philoscia Couchii is easily known from the only other described species by the form of telson and abdominal appendages. My stay in Cornwall was so short that I am sure there were other species overlooked by me. Should any naturalist wish to follow up the subject, Mr. James Langhorn, of Polperro, would, I am sure, if applied to, willingly point out the locality named, as he was with me when I found the animal; his collections of preserved fish, crustacea, &c. would well reward a journey, even to Polperro.—*John Robert Kinahan; Donnybrook, Dublin, April* 30, 1858.

Note on the Paper by Messrs. Boyd and More "On the Geographical Distribution of Butterflies in Great Britain."—I was much surprised at observing in Messrs. Boyd and More's paper on the distribution of butterflies that the South Wales area, No. 6, was entirely unrepresented; and now that Mr. Scott (Zool. 6065) asks, has no one visited this portion of South Wales who can give us information? I venture to name the species that I have myself seen and taken.

Butterflies taken in Area 6, in 1856—57.

Pontia Brassicæ, Rapæ and Napi.

Pieris Cratægi. In great abundance; I found the larvæ feeding a fortnight since by thousands upon insulated shrubs of Prunus spinosa, eating out the centres of the unexpanded buds or basking in the sun upon their winter webs.

Anthocharis Cardamines. Common.

Gonepteryx Rhamni. Common.

Thecla Betulæ. I got six or eight specimens last year, and bred others.
Thecla Pruni. Most abundant.
Thecla Quercus. Plentiful.
Chrysophanus Phlæas. Common.
Polyommatus Argiolus. Common.
Polyommatus Alsus. Very abundant, but local.
Polyommatus Alexis. Everywhere.
Polyommatus Agestis. Local.
Argynnis Paphia. Plentiful.
Argynnis Aglaia. Less common than Paphia.
Argynnis Euphrosyne. By thousands.
Argynnis Selene. Very plentiful.
Melitæa Artemis. By thousands.
Vanessa Cardui. Not common.
Vanessa Atalanta, Io, Urticæ, Polychloros and C-album. Plentiful and widely spread.
Arge Galathea. By thousands.
Satyrus Semele, Janira, Tithonus, Megæra, Ægeria, Hyperanthus and Pamphilus. All very abundant on the hills.
Pamphila Linea and Sylvanus.
Syrichthus Alveolus. Sparingly.
Thanaos Tages. Local.

This list refers to a circle round Cardiff, say of ten miles radius, and results from very limited observations in two years, during which not one quarter of the ground indicated has been explored.—*Robert Drane; Guestwick, Norfolk, May* 1, 1858.

[I shall feel extremely obliged to the Rev. Mr. Drane for specimens of Thecla Pruni, which he mentions as occurring in an entirely new locality.—*E. Newman*].

Capture of Vanessa Antiopa at Stoke Newington.—On or about the 16th of September, last year, a specimen of Vanessa Antiopa was taken: both the wings on one side are injured by a piece having been taken out, probably by a bird.—*J. Rogers; Green Lane, near the Manor House, Stoke Newington, May* 12, 1858.

Capture of Vanessa Antiopa in Scotland.—Mr. Turner took a hybernated specimen in Scotland, in April: it is one of the largest and finest I have ever seen. —*Edward Newman.*

Is Artaxerxes a Species.—With regard to P. Agestis and Artaxerxes, I believe them to be merely permanent varieties or races of one species. There is no structural difference to warrant their separation; though I should never expect to rear a specimen of Artaxerxes from an egg deposited by Agestis or *vice versâ.* The description of the larva of Agestis sent me by Zeller corresponds exactly with that of Artaxerxes from this neighbourhood, and not at all with the description of the former larva in Stainton's 'Manual'; but Zeller's larva was certainly found on Erodium Cicutarium, while those of Artaxerxes feed on Helianthemum vulgare. We, however, so constantly find that the same species will subsist on many different plants, that the mere fact of difference in food cannot be considered of much importance; nor can the circumstance that Agestis is double-brooded, while Artaxerxes has only one brood in the year, either, have much weight, as many insects are only single-brooded in Scotland, which are double-brooded on the Continent and in the South of England. There will still remain, however, a doubt upon the subject, until the transformations of both insects have been compared by the same individual; and I have never yet been able to induce any of our southern collectors to send me the larva of Agestis, which must be common, and easily found, where it occurs.—*R. F. Logan; Duddingston, Edinburgh, May* 17, 1858.

Occurrence of Thecla Rubi, Anthocharis Cardamines and Pieris Rapæ in Banffshire.—Whilst rambling last week in search of birds' nests, I was delighted and not a little surprised to meet with quite a colony of this pretty little green under-sided butterfly, but they were so active that I succeeded in taking but one out of eight or nine that I pursued. On the following day I met with another station for the same insect. Both the stations are high up on the hills, and a gentleman who resides in the vicinity told me they were met with there every season. Lower down, Pieris Napi and Anthocharis Cardamines were met with on lower ground in abundance.—*Thomas Edward; Banff, May* 8, 1858.

Occurrence of Deilephila livornica near Exeter.—The capture of Deilephila livornica is, I believe (particularly at this season of the year), of rare occurrence. It may, therefore, be worthy of a notice in the pages of the 'Zoologist,' that a male specimen of this insect was, on the 20th instant, taken at rest on the ground in a garden near my house, and is now on my setting-board.—*H. D'Orville; Alphington, near Exeter, April* 22, 1858.

Notodonta carmelita at Addington.—The park of the Archbishop of Canterbury has again been successfully searched for Notodonta carmelita, and this beautiful, but local species, seems likely to become general in collections: its season extends from the last week in April to the end of the second week in May, thus following the equally desiderated Aleucis pictaria.—*Edward Newman.*

Stauropus Fagi.—This insect, now so rare, has turned up in woods to the north of London this year, at rest on the boles of oak trees.—*Id.*

Endromis versicolor and Petasia nubeculosa.—Mr. Turner has just returned from Scotland with an abundant supply of these two beautiful moths. His collection of versicolor exhibits rather a remarkable feature, the males and females being in nearly equal numbers. Every insect has been pinned before it had taken wing, hence they are in the most perfect condition. He offers the versicolor at 5*s.* a pair, male and female; the nubeculosa at 30*s.* a pair, male and female.—*Id.*

Capture of Heliothis peltigera at Plymouth.—During a walk on the 18th of April I took a specimen of Heliothis peltigera, at rest on a stone in a steep bank near Plymouth.—*H. S. Bishop; Catherine Street, Plymouth, April* 27, 1858. —*Intelligencer.*

The Larva of Gnophos: is there more than one British Species?—The larvæ of this genus are now full grown: those which I am acquainted with feed by night on the rock cistus (*Helianthemum vulgare*), and may best be taken by searching late in the evening with a lamp, but a close search will reveal them by day, concealed under the leaves. Of the brown variety, common in this neighbourhood, I have known the transformations for some years; the lead-coloured insect, abundant on the upper part of the mountains in North Wales, has also been reared by our Northern entomologists,—the larvæ of this variety and their habits are identical with the Bristol insect. There are two varieties occurring in the Isle of Wight, on the South Downs and other places, one ashy-coloured in abundance, the other semitransparent and rarer: there is also a very dark insect, abundant in the New Forest and on various heaths in the South of England. It would be very interesting to compare the larvæ of all the varieties and ascertain if any difference exists between them, or whether the great and constant difference in the colour of the perfect insects is merely attributable to soil. I have not used any specific names for the several varieties, as there seems considerable confusion among them.—*P. H. Vaughan ; Redland, Bristol.—Id.*

Gnophos obscuraria.—Although it is quite true that all the specimens of Gnophos obscuraria taken on Parley Heath are of a dark colour, I do not consider that character sufficient to distinguish them as a species from the lighter-coloured ones. I took one specimen on Parley Heath, which, placed by the side of some of the darker specimens from Charmouth, would puzzle any entomologist to say to which species it belonged.—*J. C. Dale ; Glanville's Wootton, near Sherbourne, May* 8, 1858.

[The following extract from the 'Entomological Magazine,' i. 515, dated October 1833, will show that the excellent entomologist who contributes the foregoing paragraph entertained and published the same opinion as to the extending the limits of this variable species twenty-five years ago, which is now gaining ground through the advocacy of that no less accomplished observer, M. Guenée. "I have taken Charissa serotinaria on a chalk soil, as in the Isle of Wight, for instance, and always whitish ; C. pullaria, on stony chalk, at Dover, is rather darker ; and another variety, on Portland stone, darker still ; besides a variety at Monk's Wood, which appears intermediate. I have taken C. dilucidaria at Teignmouth, between grass and heath ; and one, very nearly allied, on the Mendip Hills, out of furze and on old walls. C. obscuraria, which I have taken on Parley Heath, is very dark indeed. Is it not possible that all these are but one species ?—*J. C. Dale*."—*Edward Newman*].

Gnophos pullaria, &c.—I have before me larvæ of this insect, taken by Mr. Vaughan at Durdham Down, furnished to me by Mr. Greening, and also larvæ collected by Mr. Greening, Mr. Almond and myself at Llanferros, Denbighshire, and at Prenton, in Cheshire, and of some larvæ which I met with on Bidston Hill last week. Having paid much close attention to the egg, larvæ and imago of this insect, I have no hesitation in pronouncing the whole of these larvæ to be those of one variable species. It may be said, "So says Guenée ;" but, however proud we may be of M. Guenée's admirable works, we must not take all for granted that even he says, as, for instance, Cheimatobia filigrammaria and C. autumnaria, which he gravely tells us are one species (simply because he was short of information upon this point) do not even appear in the same localities or within a month or two of each other ; but, as it is more than probable that I shall have the larvæ of both species this season, I reserve my remarks for a time, merely observing that I already possess sufficient information respecting both species to warrant me in saying they are distinct. I may also observe that I have a full set of another equally distinct species (a birch feeder) in my cabinet, under the name Cheimatobia approximaria : the female of this species is even more distinct from either of the above species than the female of autumnaria is from the female of filigrammaria.—*C. S. Gregson ; Stanley, May* 9, 1858.—*Intelligencer.*

Gnophos obscurata and G. pullata.—In Mr. Stainton's 'Manual' two species of the genus Gnophos are given as British, *viz.*, obscurata and pullata. Whether we have or have not more than one species, it is certain that the pullata of Treitschke, Herrich-Schæffer and Guenée, and which is considered to be the species intended by this name in the Vienna Catalogue, has not yet been found in Britain, and therefore the name ought not to be applied to either of the varieties or species found here. The probability is that we have only one, varying, according to the locality, from a very pale gray to a brownish black; but the discovery of the larvæ of all the varieties will settle the question.—*Henry Doubleday; Epping, May* 13, 1858.

The Genus Oporobia.—In the 'Intelligencer' Mr. Gregson states that, in his opinion, we have four British species of this genus. I cannot agree with him, and think that my friend M. Guenée is right in reducing them to two, dilutata and filigrammaria. The Oporobia autumnata of Boisduval and Guenée does not appear to have occurred in Britain. O. dilutata is extremely variable in size and colour, and the Perthshire specimens are nearly double the size of those taken in the South of England. In this locality the late Mr. Weaver captured a species which has since been known by the name of autumnaria, and which differs from the Manchester and Arran specimens of filigrammaria in nothing but size, being much larger and exactly agreeing in this respect with the specimens of dilutata found in the same locality. I sent a long series of each sex of this insect to M. Guenée, and, after a careful examination, he came to the conclusion that it was only a local variety of filigrammaria. Mr. Edleston has since seen some of the specimens, and considers them the same as the Manchester species, but much finer. The first specimen I ever saw of this insect was given to me, many years since, by Sir William Jardine, and I was convinced that it was distinct from dilutata, although my late friend J. F. Stephens thought at that time it was only a variety. When in Paris, some time afterwards, I saw specimens of autumnata in the collections, and thought them identical with the one which I possessed. I had not the specimen with me to compare with the French ones, and it seems that I was mistaken. Mr. Edleston afterwards took the species near Manchester, and Mr. Weaver in Arran, and, more recently, the larger specimens near Rannoch.—*Id.*

Description of a British Eupithecia new to Science.—

EUPITHECIA VIMINATA, *Doubleday.*

E. *Alis omnibus cinerascentibus, anticis puncto minuto ordinario nigro; striga obsoletissima postica undulata alba.*

All the wings pale ashy brown, with the ordinary black spot in the centre of the anterior wings, but very minute, and a very indistinct pale waved line at the posterior margin. Posterior wings pale brown, with very faint undulated strigæ.

I sent this obscure species to my friend M. Guenée: it does not appear to be a variety of any named species, and M. Guenée considered the name viminata a very suitable one if the insect was really distinct, as it appears to frequent the osier. Having examined several specimens kindly lent to me by Mr. Greening, Mr. Bond and the Rev. P. H. Newnham, I have little doubt of the validity of the species.—*Id.*

Capture of Cucullia Chamomillæ near London.—I took a fine male specimen of this insect, in the neighbourhood of Hornsey, on the 9th instant. I have not heard of its being taken so near London before, or at such an early date. The specimen is in the collection of the Entomological Club.—*Thomas Huckett; 26, Britannia Row, Lower Road, Islington; May* 17, 1858.

Occurrence of Ephyra orbicularia at Lewes.—On Saturday evening last my son Walter had the good fortune to take a very perfect specimen of Ephyra orbicularia.—*Edward Jenner; 2, West Street, Lewes, May* 17, 1858.

Larva of Tephrosia Laricaria.—In a few remarks (Zool. 6067) upon the larva of

T. Laricaria, the editor very sensibly and naturally asks how I "recognise a larva of which no figure or description exists, indeed which no one has previously seen, and which I have not yet bred, to be that of Tephrosia Laricaria?" My reply is that I came to the conclusion that the said larvæ were those of T. Laricaria, and could be no other species,—*first*, because no other known larva of that size feeds upon the larch; *secondly*, because the size and general appearance resembled generically that of its congener T. crepuscularia, though still distinguishable; and, *lastly*, because the perfect insect is an inhabitant of Lancashire, where T. crepuscularia (at all events our pale ashy specimens) are rarely taken. I regret to add that every one of seven larvæ taken last September have, I fear, died in the pupa state, unless indeed they are ichneumonized.—*Henry Burney; Wavendon Rectory, near Woburn, Bedfordshire; May* 18, 1858.

[I feel much obliged for Mr. Burney's reply, but I cannot say that I regard his reasons as satisfactory: the proof that these seven larvæ were those of T. Laricaria seems to me as far removed as ever.—*Edward Newman.*]

Aleucis pictaria.—The pursuit of this insect has been very hot this year, and very successful; but the limits of the one locality now worked have not been extended. This is very singular, because the habits of the insect, crawling at the stems, or flitting about the white blossoms of the sloe, have for years been familiar to our best collectors. I believe Mr. Stevens was the discoverer of this secret, but, so great was his love of species preservation, that, to his credit be it spoken, I believe he never disclosed it. We have to thank that accomplished Frenchman M. Guenée, to whom Nature seems to reveal all her secrets, for making the fact known to the entomological public. Within the compass of my own limited information one hundred and twenty-eight specimens have been taken at Dartford Heath this year, the collectors on the ground being Messrs. Machin, C. B. Newman, Dow, Bouchard, Harding, Baldwin, F. O. Standish, Phipps (the son of "mine host" where the entomologists renovate the outward man), Tompkins, Wallace, Latchford, Barrett, Mitford and others. Two of these returned with empty boxes. Aleucis pictaria was first taken (in Britain) at Berechurch, near Colchester, where it was most abundant, rushing madly into the flame of candles whenever an open window or broken pane permitted of its performing this act of self-sacrifice at the shrine of Vesta. It has also been taken on the South Downs, in Sussex, where the straggling and stunted sloe bushes strive with the sea breezes.—*Edward Newman.*

Camptogramma gemmaria.—I had the pleasure to take one specimen of this rare species at a gas lamp near Dulwich on the 16th of April. It is not in good condition, and had probably hybernated.—*C. G. Barrett; 37, Park Street, Mile End, May* 12, 1858.

A Synonymic List of the British Trichopterygidæ.

By the Rev. A. MATTHEWS, M.A.

THE following synonymic list is an attempt to reduce the nomenclature of the British Trichopterygidæ into something like uniformity. I have endeavoured to accomplish this in the hope of rendering the study of these curious little atoms more intelligible to a beginner, and of avoiding the confusion which now exists from the indiscriminate application of the same name to species widely differing from each other. For this purpose I have, to the utmost of my power, carefully compared the descriptions given by most of the authors referred to in the list with specimens of each species, and in many cases I have received the valuable assistance of my friend Mr. Waterhouse, who has with much kindness examined those works to which I had not the means of access.

I have made some alterations in the disposition of the genera, since it appears to me that this family is closely allied to the Brachelytra, not only in the external form and habits of the species, but especially in the dissections of the mouth, and that, in a general arrangement of the order, it should follow that extensive class. According to this idea the transition through Ptinella to the typical genus Trichopteryx is easy and natural, and, however impracticable as a whole a purely natural arrangement may be, I do not think it should be entirely lost sight of; and again, by placing Ptilium, Ptenidium and Nossidium at the end of the family, you leave this group, by an easy descent, either to Scaphidium or Choleva, to which in many points they bear an evident affinity.

With regard to the separation of Ptinella and some others from the genera with which they have been hitherto associated, I conceive that I am justified in thus dividing them by their great external dissimilarity; and where external characters are the almost only available points of distinction, they carry with them a weight which they would not otherwise possess. I much regret that, owing to the extreme rarity of many of these species, I have been unable to obtain dissections, as I believe that such an examination would fully sanction their separation. In order to avoid multiplying terms, I have adopted for these genera names previously used in the same family by Motschoulsky and other writers; but as these names were not in every case originally applied to the species to which I have assigned them, I subjoin descriptions of the genera and species now characterized for the first time.

I have, for the same reason, retained the name of Ptilium for the genus to which Erichson assigned it, as he appears to have been the first to publish its characters: all reference to Gyllenhal must however be expunged, as that author not only did not intend the name for any of the species to which it is now given, but actually assigns it to two species of Ptenidium, *viz.* pusillum and punctatum.

PTINELLA, *Mots.*

Antennæ articulis undecim, duobus basalibus maximis, cylindricis, sex sequentibus parvis, gracillimis, gradatim incrassatis, apicalibus tribus magnis, ovatis, terminali acuminata; caput magnum, latum, fronte obtusâ, pronoto profunditer insertum; pronotum transversum, anterius dilatatum, posterius valde constrictum, elytrorum humeris bene compactum; scutellum amplum, triangulare; elytra brevia, truncata, vix dimidium abdominis tegentia; abdomen amplum, elongatum, minime retractile, lateribus alte marginatis, segmentis quinque apertis, prioribus tribus æqualibus, penultimo magno, obtuso, apicali minimo; femora robusta, elongata; tibiæ compressæ, posteriores duo medio dilatatæ; tarsi exigui.

Formâ pronoti, elytris permulto brevioribus, et abdomine prælongo ac robusto ab omnibus aliis Ptinella differt.

PTERYX, *Matthews.*

Antennæ articulis undecim, duobus basalibus maximis cylindricis, tertio exigua, sex sequentibus ferme paribus, gradatim incrassatis, duobus apicalibus magnis, rotundatis; caput magnum, latum, fronte valde rotundatâ; oculi parvi; pronotum transversum, anterius contractum, posterius dilatatum, elytrorum humeris permulto latius; scutellum modicum, triangulare; elytra ovata, truncata, abdominis partes $\frac{2}{3}$ tegentia; abdomen ovatum, retractile, segmentis quinque ferme æqualibus apertis, lateribus haud marginatis; coxæ magnæ, posteriores parum dilatatæ; tibiæ longæ, paulo compressæ, posteriores indistincte calcaratæ, ac medio parum dilatatæ; tarsi longiores gracillimi.

Formâ corporis, præsertim pronoti, hoc genus Trichopterici assimilat, coxis tamen parum dilatatis, antennisque dissimilibus facile potest distingui.

Pteryx mutabilis, Matthews.

L. c. $\frac{3}{8}$—$\frac{7}{16}$ lin. Elongata, ovata, rufo-testacea, aureo pubescens, crebre ac fortius punctata; capite magno, rotundato; pronoto transverso, longitudini capitis vix æquali, anterius valde contracto, angulis rotundatis, angulis posterioribus rectis, margine posteriori et anteriori rectâ; elytris ovatis, ad humeros pronoto angustioribus, apicibus truncatis, ad suturam sinuatis; pedibus atque antennis pallidis, translucidis, antennarum articulis coronâ setarum nigrarum ornatis.

Color speciei hujusce post mortem est varius, viventibus rufo-testaceus aut dilutior, aut intensior, sed post mortem varietatum harum aliam aut aliam adhibeat, videlicet,

Var. α. Ut in vitâ testacea, aut rufo-testacea, colore uno.

Var. β. Testacea, elytris translucidis, alâ utrâque plagâ nigrâ, mediâ, longitudinali, visâ.

Var. γ. Rufo-testacea, elytris subtranslucidis, capite, pronoto, apicibusque latis elytrorum, piceis.

Permultum dubito annon hæcce species T. suturalis D. Erichson atque aliorum sit, et ei tributam esse vellem, ni figura in Monographiâ D. Gillmeister determisset; cujus figuræ aliæ omnes adeo sint perfectæ, ut sit vix verisimile hac unâ falli.

Capta prope Weston in agro Oxoniensi.

Trichopteryx convexa, Matthews.

L. c. ½ lin. Valde convexa, punctata, nigra, nitida, capite magno prominulo; pronoto valde convexo, posterius dilatato, leviter sed distincte punctato, ad basim lineâ punctatâ, transversali, profunde impressâ, marginibus lateralibus adjunctâ; lateribus ipsis leviter marginatis, et ad modum T. grandicollis rotundatis; margine basali subsinuatâ, angulis posterioribus ferrugineis, acutissimis, et valde productis elytrorum humeros amplexis; elytris brevioribus, longitudine pronoti vix excedentibus pallide pubescentibus, magis profunde punctatis, apicibus ferrugineis subrotundatis; antennis ac pedibus ferrugineis.

Formâ convexissimâ, et pronoti lineâ transversali ab aliis cognoscitur.

In agro Oxoniensi semel capta.

MICRUS, *Mots.*

Antennæ pilosæ, articulis undecim, duobus basalibus elongatis, robustis, cylindricis; tertio exiguo, parti trienti sequentis vix æquali, quinque proximis æqualibus, elongato-ovatis, apicalibus tribus elongatis, gradatim incrassatis; palpi maxillares magni, articulis quatuor, basali minuto, secundo elongato, parum recurvato, tertio maximo ovato, apicali minutissimo, acuminato; caput magnum, latum; oculi prominuli; pronotum subquadratum, paulo anterius dilatatum; scutellum amplum, triangulare; elytra oblonga, truncata, apicibus fere rectis; abdomen obtusum, segmentis quatuor apertis, prioribus tribus fere æqualibus, postremo maximo obtuso; pedes parum elongati, coxis anterioribus magnis posterioribus paulo dilatatis; tibiis posterioribus calcaratis, tarsisque brevioribus, gracillimis.

Formâ oblongâ et obtusâ, pronoto subquadrato, atque coxis minus dilatatis a Trichopterice hoc genus differt ab aliis autem coxis evidenter dilatatis elytrisque truncatis.

TITAN, *Newman.*

Antennæ articulis undecim, basali maximo cylindrico, secundo magno orbiculato, sex sequentibus brevibus rotundatis, fere æqualibus, tribus ultimis majoribus rotundatis, apicali acuminato; caput magnum, fronte rotundatâ; pronotum transversum, posterius parum dilatatum, capite vix longius, lateribus rotundatis, angulis fere rectis; scutellum magnum triangulare; elytra abbreviata, quadrata, abrupte truncata, posterius parum dilatata, ad humeros pronoto parum angustiora; pedes breviores, coxis omnibus magnis, posterioribus haud laminatis, tibiis anterioribus dilatatis, intus calcaratis posterioribus quatuor robustis, tarsis mediocribus, articulis basalibus parum dilatatis.

Hoc genus coxis haud laminatis Trichoptericibus propriis differt, a sequentibus elytra brevissima ad distinguendum valent.

SYNONYMIC LIST.

Fam. TRICHOPTERYGIDÆ, *Haliday, Dub. Nat. Hist. Rev.* (*Proc. of Soc.* pp. 121—123; *Faune Francaise.*

Trichopterygia, *Gillmeister, Deuts. Ins. von J. Sturm.* xvii. Trichopterygia, *Erichson, Nat. der Ins. Deuts.* iii. 13. Ptilina, *Heer, Faun. Col. Helvet.*

Gen. 1. PTINELLA.

Trichopteryx, p., *Gillm.* Ptilium, p., *Erichson, l. c.* iii. 31—33; *Guérin; Faune Francaise,* i. 338; *De Jean, Catal.* 3rd ed. 138. Omalium, *Waltl, in litt. test. Gillm.*

1. Britannica, *Matthews, Zool.* 6032.

Gen. 2. PTERYX.

1. Mutabilis, *Matthews.*

Gen. 3. TRICHOPTERYX.

Trichopteryx, *Kirby*, *Int. to Ent.* iii. 40; *Stephens, Ill. Br. Ent.; Curtis, Guide; Erichson, l. c.* 18; *Heer, Faun. Col. Helvet.* i. 374; p., *Gillmeister, l. c.* 1; *Faune Francaise*, i.; *Haliday, l. c.* 122. Acrotrichis, p., *Motschoulsky; Wollaston.* Silpha, p., *Marsham.* Scaphidium, p., *Gyllenhal.* Latridius, p., *Herbst.* Dermestes, p., *De Geer.* Ptilium, p., *Sturm's Catal.; Motschoulsky.*

1. Grandicollis, *Erichson, l. c.* 20; *Haliday; Faune Francaise:* fascicularis, *Heer; Gillm.:* minutissima? *Marsh.:* atomaria, *Steph.:* lata, *Mots.*

2. Convexa, *Matthews.*

3. Fascicularis, *Herbst, Käf.* v. 8, pl. 41, f. 7; *Erichson; Faune Franc.; Haliday:* intermedia, *Gillmeister:* grandicollis, *Maerkel, Mann.*

4. Atomaria, *De Geer, Ins.* iv. 218, t. 8, f. 16—20 (*test. Gillm.*); *Gyllenhal; Erichson; Heer; Gillmeister; Faune Fr.; Redtenbacher; Motschoulsky; Haliday:* minima, *Marsham; Stephens:* flavicornis, *Waltl:* marina, *Motschoulsky: Var.* Chevrieri, *Allibert.*

5. Thoracica, *Gillmeister, l. c.* 48; *Faune Fr.*

6. Mollis, *Haliday, l. c.* 123, pl 3, f. 7.

7. Suffocata, *Haliday, l. c.* 123.

8. Brevipennis, *Erichson, l. c.* 21; *Faune Francaise:* clavipes, *Gillmeister:* picicornis, *Mannerheim.*

9. Sericans, *Schuppel; Heer, l. c.* 374 (*test. Gillm.*); *Erichson; Faune Franc.; Motschoulsky; Haliday:* depressa, *Sturm's Catal.; Gillmeister; Redtenbacher: Var.* volans, *var.* acuminatum, *var.* bovinum, *var.* brevis, *Motschoulsky.*

10. Pumila, *Erichson, l. c.* 22; *Faune Francaise*; *Haliday:* sericans, *Gillmeister:* Montadoni, rivularis, *Allibert:* longicorne, quadratum, *Motschoulsky.*

11. Similis, *Gillmeister, l. c.* 53.

12. Pygmæa, *Erichson, l. c.* 21; *Faune Fr.*; *Haliday:* parallelogramma, *Gillmeister; Redtenbacher:* Chevrolati, *Allibert.*

Gen. 4. MICRUS.

Micrus, *Motschoulsky.* Ptilium, *Faune Fr.* i. 334.

1. Filicornis, *Faune Fr.* i. 338.

2. Pulchellus, *Allibert, in litt. Dom. Aubé* (*test. Gillm. l. c.* 95); *Faune Fr.*

Gen. 5. TITAN.

Titan, *Newman.* Trichopteryx, p., *Heer, Erichson; Faune Fr. Gillmeister; Allibert; Haliday.*

1. Abbreviatellus, *Heer, l. c.* i. 375; *Erichson; Faune Francaise:* curta, *Allibert; Gillmeister; Haliday:* Titan? *Newman, Ent. Mag.* ii. 201.

Gen. 6. PTILIUM.

Ptilium, *Erichson, l. c.* 24; *Redtenbacher; Comolli; Faune Fr.; Haliday.* Trichopteryx, p., *Stephens; Motschoulsky; Allibert; Mannerheim; Gillmeister.* Latridius, p., *Herbst.* Elophorus, p., *Gyllenhal; Weber & Mohr.* Ptinella, Micrus, Ptenidium, *Motschoulsky.*

1. Kunzei, *Heer, l. c.* 375; *Erichson; Redtenbacher; Motschoulsky; Gillmeister; Faune Francaise:* nana, p., *Stephens:* longicorne, *Waltl; Maerkel; Mannerheim:* spinipenne, *Comolli.*
2. Angustatum, *Spence, in litt.; Erichson, l. c.* 29; *Faune Fr.; Haliday:* oblongum, *Maerkel; Gillmeister; Redtenbacher:* rugulosum, *Allibert.*
3. Fuscum, *Waltl, in litt.; Erichson, l. c.* 28; *Gillmeister; Faune Fr.: Var.* fuscipenne, *Forster.*
4. Canaliculatum, *Maerkel, in litt.; Erichson, l. c.* 25; *Gillmeister:* minutissima, *Heer.*
5. Minimum, *Herbst, l. c.* tab. 44, f. 8 (*test. Gillmeister*): excavatum, *Maerkel; Erichson; Gillmeister; Faune Franc.; Redtenbacher:* foveolata, *Allibert:* limbata, gallicum, *Motschoulsky:* clandestinum, *Haliday.*
6. Coarctatum, *Haliday, l. c.* 122.
7. Minutissimum, *Weber & Mohr; Gyllenhal, Ins. Suec.* i. 136; *Erichson; Gillmeister; Faune Fr.:* trisulcatum, *Stephens; Aubé:* læsicolle, *Waltl.:* excavatum, *Haliday.*

Gen. 7. PTENIDIUM.

Ptenidium, *Erichson, l. c.* 34; *Redtendacher; Wollaston; Faune Fr.; Haliday;* p., *Motschoulsky.* Trichopteryx, p., *Kirby; Heer; Mannerheim; Motschoulsky; Allibert; Gillmeister.* Anisarthria, p., *Waterhouse; Stephens.* Scaphidium, p., *Gyllenhal.* Silpha, p., *Marsham.* Ptilium, *Schuppel* (*test. Gyll.*)

1. Pusillum, *Gyllenhal, l. c.* i. 189, iv. 293; *Erichson; Redtenbacher; Gillmeister; Faune Francaise; Haliday:* minutissimum, *Stephens:* nitidum, *Heer:* 4-foveolatum, *Allibert:* evanescens, *Marsham.*

2. Lævigatum, *Erichson, l. c.* 35; *Gillmeister; Faune Franc.; Haliday:* punctatum, *Stephens.*

3. Punctatum, *Gyllenhal, l. c.* iv. 293; *Faune Fr.; Wollaston; Haliday:* fuscicorne, *Erichson:* alutacea, *Gillmeister:* littorale, obscuricorne, *Motschoulsky.*

4. Apicale, *Erichson, l. c.* 35; *Sturm; Redtenbacher; Gillmeister; Faune Francaise; Haliday:* perpusillum, melas, *Marsham; Stephens:* nitidum, *Stephens:* evanescens, *Heer; Motschoulsky:* punctatum, elongatum, myrmecophilum, *Motschoulsky.*

Gen. 8. NOSSIDIUM.

Nossidium, *Erichson, l. c.* 17; *Faune Fr.; Haliday.* Anisarthria, p., *Stephens; Motschoulsky.* Ptilium, p., *Redtenbacher.* Dermestes, p., *Marsham.*

1. Pilosellum, *Marsham, Col. Brit.* 78; *Stephens; Erichson; Faune Francaise; Haliday:* nitidulum? brunneum? *Marsham; Stephens:* Ferrarii, *Redtenbacher.*

A. MATTHEWS.

Gumley, Market Harborough,
May 15, 1858.

Remarks on the Sale of the Entomological Society's Exotic Collection: a Letter addressed to the President.

Dear Dr. Gray, Oatlands.

As you have taken no notice whatever of the only part of my letter which was particularly addressed to you, I suppose I must come to the conclusion that the Council do not mean, by a small act of grace, to extenuate a great injustice.

Unconvinced by your lecture, I stick to my text that you have done that which is neither lawful nor right.

The Society may, as you say, "derive great benefit from what it has done." It may prosper by the aid of that which I believe to be ill-gotten wealth; but I consider that its stability and good name went with the tattered fragments of the collection which was dispersed at the sale-room.

Before then I would not have presumed to compare my private collection with that of a Society, but since you have done so I accept the comparison. My life, in a business point of view, may be worth fifteen or twenty years' purchase, and I suppose this is your notion of the duration of the Society since its fall. I see no further analogy between a public and a private collection. One is *known* to be of short duration, the other is *supposed* to belong to the future. My collection is my own, to dispose of as I please; yours was entailed and left to you in trust: mine, when I am done with it, will, I hope, be placed in the hands of those who have more regard for the feelings of others than the Council of the Entomological have shown.

You attempt to connect me, as an M.E.S., with the misdeeds of the Council. The fourteen days' notice of the sale, when the collection was already doomed and at the sale-room, was—or my memory fails me—the *only* notice which, as a member of the Society, I have ever had of the intentions of the Council, and this notice was sent me not by them, but by the auctioneers. Of the years of discussion of which you speak I have never heard one syllable, except by rumour. Until that fourteen days' notice was given my belief was that the better feelings of the Council had prevailed, and that the rumoured sale had been considered, as it ought to have been, an impossibility.

I am yours very truly,
W. C. Hewitson.

Reply to the preceding by Dr. Gray.

British Museum, May 12, 1858.

My dear Mr. Hewitson,

I have this moment received from you a note, without date, respecting the sale of the Society's collection, and as you inform me that you have sent it to Mr. Newman, as you did the former note, before it reached my hands, I reply through the same channel. I cannot agree with you that the Society has done anything "which is neither lawful nor right;" but I believe that they have acted in a most proper, regular and legal manner throughout, and with your implied sanction.

It is true that the Society hold the collection and other property in trust for the benefit of the members at large; but the trust has nothing to do with the persons who have presented specimens to the Society without any condition or reservation of any kind. I think you overlook the fact that the members of the Society who do not attend the meetings of the Society when duly invited are bound by the acts of those that do attend, and that you cannot excuse yourself because you have neglected your duties as a member.

My dear Sir,
Ever yours truly,
J. E. Gray.

Remarks on Dr. Gray's Note (Zool. 6070).

To the Editor of the 'Zoologist.'

Will you allow me to protest against the doctrine laid down in Dr. J. E. Gray's letter (Zool. 6070), *viz.* that public bodies stand on the same footing as individuals, with respect to the right of converting into money objects of Natural History that have been presented to them. Surely there must be general concurrence in Mr.

Hewitson's view, that Collections are given to public Societies *to prevent the dispersion of them:* gifts to individuals, for the gratification of friendly feeling, stand on a very different footing; yet, even in the latter case, the conversion of the gift into money would be generally deemed a most ungrateful proceeding. I know nothing more of the matter in dispute than what is to be collected from the two letters, and my sole object in troubling you with these few lines is to avert the discouragement of donations to public Institutions, which Dr. Gray's avowal that "their property must be liable to be distributed like that of a private individual" must necessarily produce. I most strongly dissent from the Dr.'s doctrine that *the legality* of the sale is the only question for consideration.

I am, Sir, yours obediently,

J. P. Wilmot.

Leamington, May 12.

[The discussion on this subject will now cease.—*Edward Newman.*]

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

May 3, 1858.—Dr. Gray, President, in the Chair.

Donations.

The following donations were announced, and thanks ordered to be given to the donors:—'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1856, Nos. 2—4, and 1857, No. 1; presented by the Society. 'Catalogue of the Lepidopterous Insects in the Museum of the East India Company,' by Thomas Horsfield, M. and Ph. D., F.R.S., Keeper of the Company's Museum, and Frederic Moore, Assistant, Vol. i.; by the Hon. Court of Directors of the East India Company. 'Proceedings of the Royal Society,' Vol. ix, No. 30; by the Society. 'Proceedings of the Zoological Society,' Nos. 339—349, both inclusive; by the Society. 'The Zoologist' for May; by the Editor. 'Abhandlungen de Mathemat-Physikalischen Classe der Königlich Bayerischen Akademie der Wissenchaften,' Vol. viii. Part I.; 'Ueber den Auban und Ertrag des Bodens im Königreiche Bayun,' Part I., by Dr. F. B. W. Hermann; by the Akademie. 'The Athenæum' for April; by the Editor. 'The Literary Gazette' for April; by the Editor. 'The Journal of the Society of Arts' for April; by the Society. 'List of the Specimens of Homopterous Insects in the Collection of the British Museum,' by Francis Walker, F.L.S., &c.—Supplement; by the Author. 'A Manual of British Butterflies and Moths,' No, 16; by the Author, H. T. Stainton, Esq. 'The Entomologist's Weekly Intelligencer,' Nos. 79—83; by the Editor, H. T. Stainton, Esq.

Elections.

Robert Mc Lachlan, Esq., of Park Road Terrace, Forest Hill, and Alfred Boot, Esq., of Park Row, Greenwich, were elected Members; and Joseph Stevens, Esq., of Upper Richmond Road, Wandsworth, a Subscriber to the Society.

Exhibitions.

Mr. Majendie sent for exhibition a piece of beech bark covered with a white substance, which Mr. Westwood pronounced to be a secretion exuded from the body of the female of a species of Coccus, of which the male is as yet unknown.

Mr. Shepherd exhibited specimens of Stenus solutus, *Erichs.*, taken in the London district, observing that the species had been recorded as British in Mr. Waterhouse's recently published Catalogue, on the authority of a single specimen in the collection of Dr. Power.

Mr. W. F. Evans sent for exhibition living examples of the larva and imago of a species of the Rhynchophorous genus Prypnus, *Schoenh.*, which he had found in bulbs imported from the Cape of Good Hope.

Mr. Horace Francis exhibited various Coleoptera which he had met with in the vicinity of Folkestone, in September last, including beautiful examples of Anchomenus livens, *Gyll.*, and Ocypus (Goerius) cyaneus, *Fab.*

Mr. Janson exhibited the following Coleoptera, recently captured by him within a short distance of the metropolis:—

Oödes Helopioides, Fab., a species which he had not before taken, and which appears to be this year unusually abundant, having been found in considerable numbers in Kent, by Mr. Lewis, Mr. Douglas, Dr. Power and others: the series now before the Meeting were taken in the adjoining county of Surrey.

Badister peltatus, Panzer, a single individual found on the 19th of March last, under loose bark of willow, in the notorious Hammersmith, or, perhaps more correctly, Shepherd's Bush Marshes. The synonymy of and references to this species should be thus expressed: Carabus peltatus, *Panzer, Faun. Ins. Germ.* Fas. xxxvii. tab. 20 (1797), probably figured and described from a very immature specimen, with the head and thorax ferruginous, the elytra pale brassy, and the antennæ and legs entirely testaceous, a state of things so different from the ordinary aspect of the insect as to render identification, if not impossible, at least very problematical and unsatisfactory; *Illiger, Verzeichn. d. Käfer Preuss.* 197, 80 (1798); *Duft. Faun. Austr.* ii. 147, 193 (1812). Amblychus peltatus, *Gyll. Ins. Suec.* ii. 76, 2 (1810). Trimorphus Erro, *Newman* (*olim*), *Ent. Mag.* v. 489 (1838); *Steph. Man. Brit. Col.* 23, 134 (1839). Badister peltatus, *Sturm, Deutschl. Faun. Ins.* iii. 189, 3, tab. lxxvi. fig. a, A (1815); *Dej. Spec.* ii. 408, 4 (1826); *Iconogr.* ii. 226, 4, tab. 101, fig. 3 (1830); *Heer, Faun. Col. Helv.* i. 49, 3 (1838); *Erich. Käf. d. Mark Brand.* i. 24, 4 (1839); *Schaum, Ent. Zeit. Stett.* ix. 37 (1848); *Ann. and Mag. Nat. Hist.* 2nd series, iii. 35 (1849); *Newman, Zool.* 2276, 2277 (1848); *L. Redtb. Faun. Austr.* 82 (1849), 2nd ed. 31 (1857); *Dawson, Geod. Brit.* 61, 3, tab. 1, fig. C (1854); *Fairm. & Laboulb. Faun. Ent. Franc.* i. 63, 4 (1854); *Schaum, Naturg. d. Ins. Deutschl.* i. 352, 4 (1857).

Cossonus linearis, Linn., Schoenh., Steph., Walton. A species, judging from the old cabinets, frequently met with in Britain in days of yore, but which has probably not occurred for nearly twenty years, specimens having been taken by Dr. Power, in Cambridgeshire, about that period, since which apparently no instance is on record of its capture. The series now exhibited was taken a few days since in an old elm, which literally teemed with the insect in all its stages, the semi-decayed portions of the tree being riddled in all directions by the larvæ, and the *débris* mingled with the remains of countless members of bygone generations.

Stenus solutus, Eric., captured at the same time and place as the specimens previously exhibited by Mr. Edwin Shepherd, to whom I am indebted for the opportunity of taking this scarce and local species.

Lathrobium punctatum, Zetterstedt, Faun. Ins. Lappon. i. 84, 5 (1828), to whom, and not to Nordmann, this species must be assigned, he having first elaborately described it under this name.

Mr. Westwood remarked that Cossonus linearis used to be taken in Battersea Fields.

Mr. Janson rejoined that it was certainly not there that he had met with it: little anxiety need, however, be felt as to the precise locality which had yielded it, as he had not only secured but set out an ample supply for all his friends, and specimens (a dozen if he desired them) were quite at Mr. Westwood's service.

Mr. Gloyne observed that he had taken a specimen of Oödes Helopioides on the banks of the Thames, near Mortlake.

Mr. Stainton exhibited a new species of Cemiostoma, bred by Mr. Wailes, of Newcastle-on-Tyne, from larvæ mining the leaves of Genista tinctoria, for which the name Wailesella had been proposed: the insect was closely allied to C. spartifoliella and laburnella, but smaller, and with a bluer tint than those species.

Mr. Westwood wished to know whether the larvæ of these closely-allied species fed on closely-allied plants; if so it was most probable that they were not distinct species, but merely modifications produced by the difference in the food plant.

Mr. Stainton observed that, independently of the differences in the larvæ and perfect insects, differences which truly were minute, there were differences of habit, especially between the larvæ, which would render it difficult to refer them to the same species; and to assume that because the differences were small, and because the larva fed on a different plant, the difference of food should so modify the insect in all its stages, seemed rather like begging the question: it was *possible* the effect of the food might be to alter the appearance of the insect, but that was certainly a point which required to be *proved* before it could be admitted.

Mr. Smith exhibited a Stylops which he had bred from a living example of Andrena fuscata, *Kirby:* it emerged from the pupa at half-past nine o'clock that morning, and although he endeavoured, by keeping it in as cool a place as possible, to preserve it alive to exhibit that evening, it died at about half-past four o'clock: he believed it to be the same species which he had lately figured in the Society's 'Transactions,' or certainly a very closely-allied species.

Mr. Smith also exhibited a piece of tube formed of vulcanized India-rubber, containing cells of the leaf-cutter bees: the cells were placed transversely in the tube, which he considered an extraordinary instance of sagacity in the bees.

Mr. Stevens exhibited some butterflies, taken in Amboyna by Mr. Wallace, including beautiful males of Papilio Ulysses, and the female of this species, the Papilio Diomedes, *Cram.*; also Papilio Codrus, and some fine Pieridæ.

Mr. Waterhouse exhibited the following Coleoptera, from the Collection of Dr. Power:—

Tachyusa sulcata. Taken at Southend.

Homalota orbata. Taken at Merton.

Agaricochara lævicollis. Taken at the Holt, Hampshire.

Oligota granaria. Taken at the Holt, Hampshire.

Xantholinus glaber. Taken at Holme Bush.

Quedius fuscipes. Taken at Addington.

Stenus solutus. Taken at Cowley and Lee.

Stenus ——— (sp. 20 of Mr. Waterhouse's Catalogue). Taken at Shirley. Mr. Waterhouse observed that this insect, in some respects (especially in the dark colouring of the palpi), more perfectly agreed with the description of S. providus, *Erichs.*, than did the species which he had supposed was that insect, and which, from its more cylindrical form, he now thought might prove to be Kraatz's S. Rogeri. Before, however, this point could be settled, it would be necessary to ascertain the sexual characters of Dr. Power's insect, of which one specimen only had been found.

Philonthus signaticornis. Taken at Eastcot and Merton.

Philonthus nigrita. Taken at Eltham.

Philonthus pullus. Taken at Portsea.

Philonthus lepidus. Taken at Deal.

Mr. Waterhouse also exhibited the following species from his own collection:—

Oxypoda aterrima, nov. sp.

Anisotoma obesa, Schmidt, *A. ciliaris*, Schmidt, *A. brunnea*, Sturm, *A. parvula*, Sahlb.

Cyrtusa minuta, Ahrens.

Agaricophagus cephalotes, Schmidt.

Leiodes orbicularis, Herbst.

Euthia plicata, Gyll., *E. truncatella*, Erichs. First taken by Mr. Whittingham at Leytonstone, and subsequently by Mr. Waterhouse at the Crystal Palace.

Mr. Waterhouse read the following description of the new species of Oxypoda exhibited by him:—

"OXYPODA ? ATERRIMA.

"O. *linearis, aterrima, nitidiuscula, antennis pedibusque piceo-nigris, thorace elytrisque crebre punctatis, abdomine parcius punctato; thorace coleopteris longitudine subæquale, basi foveola impresso.* Long. corp. 1 lin.

"This little insect is extremely like Homalota analis, but is usually a trifle larger: the antennæ are distinctly shorter, a little stouter, and with the intermediate joints strongly transverse; the head rather more globose and less suddenly constricted behind; the thorax rather less transverse, but in other respects like, with the same posterior fovea and indistinct dorsal channel; the punctuation, however, of this part, as well as of the elytra, is rather stronger: the elytra are very nearly equal to the thorax, both in width and length, and present scarcely a trace of the posterior notch: the abdomen is rather less finely and less thickly punctured than in H. analis; the three visible segments nearest the elytra are transversely impressed at the base; the jaws are testaceous; the palpi dusky.

"Several specimens of this insect have been taken by Mr. Morris Young near Paisley: its general appearance is so like that of a Homalota (especially H. analis) that I was much surprised, upon placing it under the microscope, to find five joints to the fore tarsi, and this character accompanied by a somewhat elongated basal joint to to the posterior tarsi: this joint, however, though decidedly longer than the following joints, is less elongated than in most of the Oxypodæ."

Mr. Westwood exhibited a drawing of a dark variety of Acronycta Ligustri, and of the larva from which it had been bred by Mr. Henry Boyle.

Captain Cox sent for exhibition a portion of a hop-pole perforated by the larva of a Coleopterous insect, apparently a Callidium.

Mr. Stevens communicated the following extract from a letter written by Mr. H. W. Bates, from Sto. Paolo, Upper Amazons:—

"On arriving at this station, one of the first new acquaintances in the butterfly department which greeted me was the very beautiful Pandora Prola, *Boisd.*,—at least I suppose it to be this species, from the nearly spotless scarlet colour of the under surface of posterior wings; it was flying wildly about the streets of the village, entering houses by the windows and settling on the walls: since then I have always seen one or two on every very hot sunny day: the species does not penetrate the forest; it is found only about the houses, and at a spot on the borders of the forest where the vultures roost: its habits altogether are unlike those of any other species of Nymphalidæ; it settles frequently, sometimes on the ground, attracted by offal, but frequently on the trunks of trees, bare walls, &c., holding in repose its wings slightly raised: it is excessively wary, and only during the very hottest weather allows itself to be approached: I have captured several on my own person, as, when standing about waiting an opportunity to obtain it, it is apt to sail up boldly and settle on one's clothing; its habit of settling on the trunks of trees and its bold rapid style of flight very much resemble the manner of the Ageroniæ, and I am quite satisfied that the true position of the genus Pandora is in proximity with Ageronia. There are two grand species of this latter genus new to me also found here, one of which has the greater part of the under surface of the hind wings red, and the other has the same part saffron-yellow: they fly in company with Pandora at the place on the borders of the forest, but do not wander so far in their flight. I wish to mention here that I think there is quite an erroneous conception established by lepidopterists, of the nature and affinities of the Ageroniæ. M. Lacordaire and Mr. Wallace have said that the chrysalis is secured by a ligature round the body; I think there is some mistake about this: I have bred two species of the genus, and most certainly the chrysalis is suspended by the tail like all the other Nymphalidæ. In our systems the Ageroniæ are placed at the head of the Nymphalidæ, near the true Papilionidæ, as though forming the connexion between the families. I think all this is a misconception. There is no proximate affinity at all between the Papilionidæ and the Nymphalidæ; the two families are separated by the whole mass of the Erycinidæ. I should as little expect to find an Ageronia chrysalis with a ligature round the body, as a true Papilio chrysalis suspended only by the tail. The larvæ of Ageronia are spinose; the lines of thoracic segments densely ramose. In their flight they make a smacking noise with their wings like the clicking of castanets, but rarely repeated. The Pandora does not produce this noise."

The Secretary read the following paper by Mr. A. R. Wallace:—

A disputed case of Priority in Nomenclature.

"Allow me to call the attention of the Entomological Society to what seems to me a novel and most erroneous as well as inconvenient interpretation of the law of priority: it is, that of transferring a name long borne by one insect (but which it has lost by being found to be but a sex or variety) to another insect which has been erroneously referred to the same species. This has been done by the late Mr. Doubleday, who has changed Ornithoptera Remus, a name which for fifty years has been invariably borne by one well-known species, into O. Panthous, a name which for a still longer period has been applied to the female of O. Priamus. Such a change would be most inadvisable, even were the principle on which it was made a good one; whereas it is one which gives, at it were, a premium to error. Linnæus described the female of Priamus as a distinct species (Panthous) and Remus as the male of Panthous. Cramer corrected the latter error and figured the two sexes of Remus correctly, giving the species for the first time a distinct name. This name it appears to me cannot be changed for that of Linnæus, who erroneously supposed the species to be the same as one he had previously named, although that name has been reduced to a synonym. The two errors of Linnæus should not be allowed to take precedence of Cramer, who first correctly named the species. The question here raised is of importance because an analogous case is now open for decision. P. Darsius of G. R. Gray was previously figured by Doubleday as the male of Amphimedon. Now, Amphimedon is certainly the female of Helena, and, if the rule holds good, the new species Darsius must take the old name of Amphimedon, just as Remus has been made by Messrs. E. Doubleday and G. R. Gray, to take the name of Panthous. Such a practice will certainly not be generally followed, and I would humbly suggest that it is one of the duties of an Entomological Society, to check, by an expression of their opinion, all that tends still further to confuse the nomenclature and synonymy.

"Amboyna, January 1, 1858."

The Secretary read "Descriptions of six New British Neuroptera sent by Mr. Dale to the British Museum," by Dr. Hagen; and the following paper by Mr. Newman:—

Note on Scolytus destructor.

"Having heard from Mr. Stainton that the Royal Botanic Society had awarded a gold medal to our fellow-member, Captain Cox, for certain successful experiments in recovering elm trees from the attacks of Scolytus destructor, I was delighted to receive for the press that elaborate paper with which the Society was favoured at its last meeting. That paper is published in our 'Proceedings,' and will afford to the world abundant proof that we are now regarding Entomology in a utilitarian as as well as a scientific spirit. 'It is,' as the writer observes, 'peculiarly fitting that Science should step in and prove that over one pest at least we have power, and if not made use of the fault lies entirely with the public.' I cannot sufficiently regret my absence from so interesting a meeting, since, had I been present, I should have endeavoured to elicit still further information from a gentleman who has so successfully studied this important branch of rural economy; more especially, as the Parisians, in their bungling attempts to employ the draw-shave, have sacrificed the finest elm trees around the French metropolis. I may perhaps be allowed to state, touching the bibliography of Scolytus destructor, that I think Captain Cox scarcely goes back far enough, when he dates the knowledge of its economy from 1840: previously to that year the late M. Audouin had thoroughly mastered its history; and six years earlier still, an obscure writer in the 'Entomological Magazine' (i. 425), under the assumed name of 'Rusticus':—the habit of assuming names cannot be sufficiently reprobated—described its economy so minutely as to induce the idea that Captain Cox must have been at the writer's elbow even while he held the pen, and dictated what he wrote: before Rusticus, Kirby and Spence seem to have been cognizant of its doings; and to go back still further, the very name carries with it an idea of some knowledge of its economy. Captain Cox has, however, added one most interesting fact overlooked by previous writers: that 'the female dies at the entrance of her tube, thus performing a maternal duty by closing the aperture to her young ones with her own dead body.' The points, however, on which I would solicit for the Society additional information are these: Captain Cox states his firm conviction that healthy trees are attacked by Scolytus; and that this insect is the cause of premature decay and eventual death. He narrates with great perspicuity that eighteen dying elm trees were placed at his disposal, that he experimented on every one of them, by taking off the surface bark with a draw-shave; and that seventeen out of the eighteen completely recovered: the the operation is most simple, and I believe every one will admit that its very simplicity adds to its beauty and its value. Before commencing his experiments, Captain Cox numbered the trees from 1 to 18, and made a careful memorandum of the state of each; the summary of these memoranda may be thus briefly stated. Fifteen were suffering severely from the ravages of Cossus ligniperda; and out of these fifteen, nine were also infested with Scolytus: three, making up the eighteen, were attacked by Scolytus, but all these three "slightly." Now, to a superficial observer, it will occur that the state of the trees, scarcely bears out the author's own conclusion as to Scolytus attacking sound trees, since fifteen out of the eighteen were manifestly attacked by the most deadly enemy that a timber tree can possibly have: and to a *superficial* observer, I purposely repeat this qualifying expression, nothing can present a more sickly or abnormal appearance than a tree, the solid timber of which is riddled through and through by the enormous larvæ of Cossus ligniperda: such trees, with or without the smaller pest, I should have unhesitatingly pronounced in an unhealthy state. When Captain Cox favours us, as I doubt not he will, with an explanation of this apparent inconsistency, arising probably from some accidental oversight or transposition of words, may I ask him to reexamine the larvæ which he denominates those of Cossus ligniperda, and which had so severely injured the fifteen trees under consideration; because I never happened to find that insect feeding on elm, and had not the statement been made by an entomologist who possesses an unusually extensive knowledge of the larvæ of our British Lepidoptera, I should have fancied that the trees were dying from some other and undiscovered cause. One other slight difficulty occurs to me which will, doubtless, be removed without causing any additional or unnecessary trouble to Captain Cox. Seeing that the larva of Cossus mines the solid wood, and not the bark, except in its very juvenile state; and seeing that the fifteen Cossus-mined trees completely recovered after their outer bark had been merely draw-shaved, how is it to be explained that this simple external process affects the deadly Cossus deep in the interior? The author has not explained this, probably concluding that entomologists were more intimately acquainted with the reciprocal offices of bark and solid wood, than I fear is the case. I trust that these queries, unimportant in themselves, will not be deemed irrelevant, but will acquire some importance from the acknowledged importance of the subject; I hope they will induce Captain Cox to enrich our 'Proceedings' with a second paper still more explanatory than the first. As an observation on Scolytus, quite independent of the paper to which I have been alluding, it is rather interesting that in the two great London colonies of this insect, Greenwich Park and Camberwell Grove, its advent dated two years subsequently to the introduction of gas, and its ravages have not ye extended beyond the reach of the gas influence : that gas has an injurious effect on elms is a self-evident fact, so probably have all gases evolved by combustion in factories, since we always see elms in manufacturing cities losing their leaves six or seven weeks earlier than in the country : in this weakened state trees are particularly obnoxious to the attacks of insects, and about London elm trees are generally infested with the larvæ of Scolytus destructor and Zeuzera Æsculi. I am well aware of the alleged fact of the trees in the Hartz forest and elsewhere in France and Germany being destroyed by Scolytus, still the coexistence of elm failure and gas-lights must remain an indisputable fact, although at present a fact from which no general conclusions can be safely drawn."

Mr. Westwood observed, with reference to the latter part of Mr. Newman's paper, that the Scolytus was abundant in Christ Church Meadows, Oxford, far away from gas-lights."

Proceedings of Natural-History Collectors in Foreign Countries.

MR. A. R. WALLACE.*—" Amboyna, December 20, 1857.—My collecting this year has been so peculiar and so different from anything I have yet done in the tropics that I must give you some little account of it; my locality was at the foot of the mountains about thirty miles north of Macassar, the whole country between this range and the sea is a dead level of paddy fields, flooded for half the year, and of course absolutely barren of insects; the mountains are of limestone or basalt, the former rising from the plain in immense perpendicular walls quite inaccessible, except where a few streams break through them; the basalt hills are more rounded, and at the foot of one of them is a forest of palms and jack fruit. I had a small bamboo house built; when I arrived in August there had not been rain for two months and it was fearfully hot and parched; dead leaves strewed the ground, and a beetle of any kind was sought for in vain. After some time I found a rocky river-bed issuing from a cleft in the mountains, and though dry it still contained a few pools and damp hollows; these were the resort of numerous butterflies,—Papilio Euryphilus, the new species near Sarpedon, P. Rhesus, P. Peranthus and the rare P. Encelades, *Bois.*, the beautiful Pieris Zaranda was rather abundant, and several interesting Nymphalidæ. Here, therefore, I made daily excursions and procured good series of many of these insects; the paths in the forest adjoining this stream were pretty abundant in Ornithoptera; of two species, O. Remus and the very rare

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* Communicated by Mr. S. Stevens.

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A SUMMER BOOK.

Price 1*s.* 6*d.*,

THE INSECT HUNTERS,

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EDWARD NEWMAN, F.L.S., F.Z.S.,

LATE PRESIDENT OF THE ENTOMOLOGICAL SOCIETY.

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